# National Pollutant Discharge Elimination System
# Municipal Separate Storm Sewer Systems
# 2014 Annual Report
# (Reporting period: January 2, 2014 – June 30, 2014)

***Prepared for***

Maryland Department of the Environment
Water Management Administration
1800 Washington Boulevard
Baltimore, Maryland 21230

***Prepared by***

Prince George's County Government
Department of the Environment
Stormwater Management Division
1801 McCormick Drive, Fifth Floor
Largo, Maryland 20772

# ACKNOWLEDGEMENTS

The Prince George's County Department of the Environment, Stormwater Management Division, prepares the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Annual Report on behalf of Prince George's County. The status of the County's NPDES programs is based upon information solicited from County agencies that administer jurisdiction-wide water quality programs and accomplishments achieved in partnership with State and Federal agencies and non-profit organizations. Primary administrative and technical personnel responsible for compliance with the NPDES MS4 Permit are referenced under Permit Administration, beginning on page A-1 of this report. The following groups also provide the County with programmatic assistance, information and/or ancillary funding to assist the County's efforts in protecting and improving water resources:

Maryland-National Capital Park and Planning Commission:
- Department of Parks and Recreation, Department of Planning

Maryland Department of Natural Resources

Maryland Department of the Environment

Neighborhood Design Center

Prince George's County Agencies
- Environment:
  - Directors Office: Communications and Community Engagement Section
  - Administrative Services Division: Budget and Procurement Section
  - Stormwater Management Division: Capital Projects Construction Section, Capital Projects Design Section, Environmental Programs Section, Inspection and Compliance Section
  - Waste Management Division: Disposal Section, Recycling Section, Project Management Section, Collections Section
  - Sustainability Initiatives Division: Community Outreach Promoting Empowerment Section
- Fire/Emergency Medical Services: Hazardous Materials Division
- Health Department: Environmental Engineering Program
- Office of Information Technology and Communications
- Public Works and Transportation:
  - Office of Engineering & Project Management: Engineering Division
  - Office of Highway Maintenance: Storm Drainage Maintenance Division, Special Services Division
  - Office of Transportation: Transit Planning Section
  - Office of Project Management: Plans and Programs, Bridge Inspection & Management
- Permitting, Inspections and Enforcement: Site/Road Review Division, Inspections Division, Enforcement Division, Building Plan Review

Prince George's County Beautification Committee

Prince George's County Public Schools

United States Environmental Protection Agency, Region III

United States Army Corps of Engineers

Washington Metropolitan Council of Governments

Washington Suburban Sanitary Commission

# TABLE OF CONTENTS



**TABLES**

**FIGURES**

# ABBREVIATIONS

| | |
|---|---|
| 95-CLEAN | Prince George's County Water Pollution Line |
| ASD | Administrative Services Division |
| BBW | Black Branch watershed |
| B-IBI | Benthic-Index of Biotic Integrity |
| BMP | best management practices |
| BSR | Brown Station Road Sanitary Landfill |
| CAP | Compliance Action Plan |
| CBT | Chesapeake Bay Trust |
| CCCP | Comprehensive Community Cleanup Program |
| COMAR | Code of Maryland Regulations |
| COPE | Community Outreach Promoting Empowerment |
| CORP | County Office Recycling Program, (DoE) |
| CPCS | Capital Projects Construction Section, (DoE) |
| CPDS | Capital Projects Design Section, (DoE) |
| CFR | Code of Federal Regulations |
| Cu | total copper |
| DoE | Prince George's County Department of the Environment |
| DO | Director's Office |
| DPIE | Department of Permitting, Inspection and Enforcement |
| DPW&T | Prince George's County Department of Public Works and Transportation |
| DVD | Digital Versatile Disc |
| E. coli | *Escherichia coli* |
| EED | Environmental Engineering Division (Health Department) |
| EMC | event mean concentration |
| EMS | Emergency Medical Services |
| EPA | U.S. Environmental Protection Agency |
| ESD | Environmental Site Design |
| ESS | Engineering Services Section (DoE) |
| FD | Fire Department |
| FEMA | Federal Emergency Management Agency |
| F-IBI | Fish-Index of Biotic Integrity |
| FOG | Fats, Oil and Grease |
| GIS | Geographic Information System |
| HAZMAT | Prince George's County Hazardous Materials Team |
| HD | Prince George's County Health Department |
| HMD | Prince George's County Fire/Emergency Medical Services Department, Hazardous Materials Division |
| ID | Inspections Division (DPIE) |
| IDDE | Illicit Discharge Detection and Elimination |
| IPM | Integrated Pest Management |
| LED | Light-Emitting Diode |
| LID | Low Impact Development |
| MDE | Maryland Department of the Environment |
| MD DNR | Maryland Department of Natural Resources |

| | |
|---|---|
| MEP | maximum extent practicable |
| MES | Maryland Environmental Service |
| M-NCPPC | Maryland-National Capital Park and Planning Commission |
| MOU | Memorandum of Understanding |
| MRF | Materials Recycling Facility |
| MS4 | Municipal Separate Storm Sewer System |
| MWCOG | Metropolitan Washington Council of Governments |
| NDC | Neighborhood Design Center |
| $NO_{3+}NO_2$ | total nitrate+nitrite |
| NPDES | National Pollutant Discharge Elimination System |
| OCS | Prince George's County Office of Central Services |
| OEPM | Office of Engineering and Project Management (DPW&T) |
| OHMD | Office of Highway Maintenance Division, (DPW&T) |
| OPM | Office of Project Management, (DPW&T) |
| P2 | pollution prevention |
| P3 | Public Private Partnership |
| PAG | Proposal Analysis Group |
| Pb | total lead |
| PGCPS | Prince George's County Public Schools |
| PGSCD | Prince George's Soil Conservation District |
| PSS | Program Support Section (DoE) |
| QA/QC | quality assurance/quality control |
| R&DS | Research & Development Section (DoE) |
| RS | Recycling Section (DoE) |
| RTPID | Real-Time Passenger Information Display |
| SDI | Storm Drain Inventory |
| SDMD | Storm Drain Maintenance Division, (DPW&T) |
| SID | Sustainability Initiatives Division (DoE) |
| SMD | Stormwater Management Division (DoE) |
| SOP | standard operating procedures |
| SRRD | Site/Road Review Division (DPIE) |
| SWM | stormwater management |
| SWMF | stormwater management facility |
| SWPPP | Stormwater Pollution Prevention Plan |
| TKN | total Kjeldahl nitrogen |
| TMDL | Total Maximum Daily Load |
| TP | total phosphorus |
| TSS | total suspended solids |
| UM | University of Maryland |
| UMES | University of Maryland Extension Service |
| US ACE | United States Army Corp of Engineers |
| VOC | Volatile Organic Compounds |
| WMD | Waste Management Division, (DoE) |
| WSSC | Washington Suburban Sanitary Commission |
| Zn | total zinc |

# PART I: IDENTIFICATION

Prince George's County's NPDES MS4 Discharge Permit 11-DP-3314 MD0068284 covers stormwater discharges from the municipal separate storm sewer system in Prince George's County, Maryland, except for the City of Bowie. Discharges from the storm drain systems controlled by Prince George's County that may be subject to future NPDES MS4 stormwater program requirements may be added to this Permit at the discretion of the Maryland Department of the Environment (MDE). This permit was issued on January 2, 2014 and will remain in effect through January 1, 2019.

# PART II: DEFINITIONS

As required by MDE, terms used in this permit are defined in relevant chapters of the Code of Federal Regulations (CFR) or the Code of Maryland Regulations (COMAR). Terms not defined in CFR or COMAR shall have the meanings attributed by common use unless the context in which they are used clearly requires a different meaning.

# PART III: WATER QUALITY

As required by MDE, Prince George's County must manage, implement, and enforce a stormwater management program (SWMP) in accordance with the Clean Water Act (CWA) and corresponding stormwater National Pollutant Discharge Elimination System (NPDES) regulations, 40 CFR Part 122, to meet the following requirements:

1. Effectively prohibit pollutants in stormwater discharges or other unauthorized discharges into the MS4 as necessary to comply with Maryland's receiving water quality standards;
2. Attain applicable wasteload allocations (WLAs) for each established or approved Total Maximum Daily Load (TMDL) for each receiving water body, consistent with Title 33 of the U.S. Code (USC) §1342(p)(3)(B)(iii); 40 CFR §122.44(k)(2) and (3); and
3. Comply with all other provisions and requirements contained in this permit, and in plans and schedules developed in fulfillment of this permit.

Compliance with all the conditions contained in PARTs IV through VII of this permit shall constitute compliance with §402(p)(3)(B)(iii) of the CWA and adequate progress toward compliance with Maryland's receiving water quality standards and any EPA approved stormwater WLAs for this permit term.

# PART IV: STANDARD PERMIT CONDITIONS

## A. PERMIT ADMINISTRATION

Table A1 identifies lead program management and technical personnel for the first 6 months of the 2014 reporting year, January 2, 1014 through June 30, 2014.

**TABLE A1**
**KEY PRINCE GEORGE'S COUNTY STAFF**

| Permit Condition | Responsible Party | | |
|---|---|---|---|
| | **Department/ Division** | **Manager, Title/ E-mail Address, Telephone** | **Technical Personnel, Title/ E-mail Address, Telephone** |
| **Permit Administration** | DoE/SMD | Jeff DeHan, Associate Director<br>Stormwater Management Division<br>jmdehan@co.pg.md.us<br>301-883-5838 | N/A |
| **Legal Authority** | Office of Law | County Attorney<br>301-952-5225 | N/A |
| **Source Identification** | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Technical staff listed below |
| Storm Drain System | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Tony Newsome, Engineer<br>Environmental Programs Section<br>acnewsome@co.pg.md.us<br>301-883-7647 |
| Industrial Commercial Sources | DoE/SMD | George Nicol, Section Head<br>Inspection Compliance Section<br>gsnicol@co.pg.md.us<br>301-883-5976 | Outsourced |
| Urban Best Management Practices (BMP) | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Catherine Escarpeta, GIS Specialist<br>Environmental Programs Section<br>crescarpeta@co.pg.md.us<br>301-883-5990 |
| Impervious Surfaces | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Catherine Escarpeta, GIS Specialist<br>Environmental Programs Section<br>crescarpeta@co.pg.md.us<br>301-883-5990 |
| Monitoring Locations | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Outsourced |
| Water Quality Improvement Projects | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Outsourced |
| **Management Programs** | | | |
| Stormwater Management | | | |
| Implementing SWM Design Policies and Principles | DPIE/SRRD | Mary Giles, PE, Associate Director<br>Site/Road Review Division<br>mcgiles@co.pg.md.us<br>301-636-2060 | Rey de Guzman, Chief<br>Site/Road Review Division<br>redeguzman@co.pg.md.us<br>301-636-2060 |

| TABLE A1, CONTINUED<br>KEY PRINCE GEORGE'S COUNTY STAFF | | | |
|---|---|---|---|
| **Permit Condition** | **Responsible Party** | | |
| | **Department/ Division** | **Manager, Title/ E-mail Address, Telephone** | **Technical Personnel, Title/ E-mail Address, Telephone** |
| SWM Programmatic Information | DPIE/SRRD | Rey de Guzman, Chief<br>Site/Road Review Division<br>redeguzman@co.pg.md.us<br>301-636-2060 | Deming Chen, Engineer III<br>Site/Road Review Division<br>dchen@co.pg.md.us<br>301-636-2060 |
| SWM Design Manual | DPIE/SRRD | Mary Giles, PE, Associate Director<br>Site/Road Review Division<br>mcgiles@co.pg.md.us<br>301-636-2060 | Rey de Guzman, Chief<br>Site/Road Review Division<br>redeguzman@co.pg.md.us<br>301-636-2060 |
| SWM Construction Inspections | DPIE/ID | Michael Reahl, Code Enforcement Officer, Inspections Division<br>mreahl@co.pg.md.us<br>301-883-3820 | Andre Stewart, CSI<br>Inspections Division<br>astewart@co.pg.md.us<br>301-883-3820 |
| Private BMP Inspection and Enforcement | DoE/SMD | George Nicol, Section Head<br>Inspection and Compliance Section<br>gsnicol@co.pg.md.us<br>301-883-5976 | Satinder Sachdeva, CSI III<br>Inspection and Compliance Section<br>sssachdeva@co.pg.md.us<br>301-883-5830 |
| Public BMP Inspection and Maintenance | DPW&T/OHMD | Gwen Clerkley, Associate Director<br>Office of Highway Maintenance<br>gtclerkley@co.pg.md.us<br>301-499-8522 | Vernon Stinnett, Division Chief<br>Storm Drainage Maintenance Division<br>vlstinnett@co.pg.md.us<br>301-499-8520 |
| Erosion and Sediment Control | | | |
| Green Card Training | DPIE/ID | Michael Reahl, Code Enforcement Officer, Inspections Division<br>mreahl@co.pg.md.us<br>301-883-3820 | Andre Stewart, CSI<br>Inspections Division<br>astewart@co.pg.md.us<br>301-883-3820 |
| Quarterly Grading | DPIE/SRDD | Rey de Guzman, Chief<br>Site/Road Review Division<br>redeguzman@co.pg.md.us<br>301-636-2060 | Deming Chen, Engineer III<br>Site/Road Review Division<br>dchen@co.pg.md.us<br>301-636-2060 |
| Illicit Connection and Enforcement Program | | | |
| Field Screening and Outfall Sampling | DoE/SMD | George Nicol, Section Head<br>Inspection and Compliance Section<br>gsnicol@co.pg.md.us<br>301-883-5976 | Paul DeSousa, Planner IV<br>Inspection and Compliance Section<br>pddesousa@co.pg.md.us<br>(301) 883-5871 |
| Commercial Industrial Area Surveys | DoE/SMD | George Nicol, Section Head<br>Inspection and Compliance Section<br>gsnicol@co.pg.md.us<br>301-883-5976 | Paul DeSousa, Planner IV<br>Inspection and Compliance Section<br>pddesousa@co.pg.md.us<br>(301) 883-5871 |

| TABLE A1, CONTINUED<br>KEY PRINCE GEORGE'S COUNTY STAFF | | | |
|---|---|---|---|
| **Permit Condition** | **Responsible Party** | | |
| | **Department/ Division** | **Manager, Title/ E-mail Address, Telephone** | **Technical Personnel, Title/ E-mail Address, Telephone** |
| Investigation and Enforcement | DoE/SMD | George Nicol, Section Head<br>Inspection and Compliance Section<br>gsnicol@co.pg.md.us<br>301-883-5976 | Paul DeSousa, Planner IV<br>Inspection and Compliance Section<br>pddesousa@co.pg.md.us<br>(301) 883-5871 |
| | HD/EED | Manfred Reichwein, Program Chief<br>Environmental Engineering<br>mreichwein@co.pg.md.us<br>301-883-7632 | See program manager |
| | FD/EMS | Dennis Wood, MS, NR-P<br>Assistance Chief, Fire/EMS<br>dcwood@co.pg.md.us<br>301-883-7437 | See program manager |
| Trash and Litter | | | |
| Program Assessment and Public Education and Outreach | DoE/SID | Dawn Hawkins-Nixon, Acting Associate Director<br>Sustainable Initiatives Division<br>DHNixon@co.pg.md.us<br>301-883-5839 | See program manager |
| Trash and Litter Control – Private Property | DPIE | Ruby Sherrod, Associate Director<br>Enforcement Division<br>RJSherrod@co.pg.md.us<br>301-883-6067 | See program manager |
| Street Sweeping | DPW&T/OHMD | Gwen Clerkley, Associate Director<br>Office of Highway Maintenance<br>gtclerkley@co.pg.md.us<br>301-499-8522 | Michael Brown, Division Chief<br>Special Service Division<br>mobrown@co.pg.md.us<br>301-499-8520 |
| Recycling, Trash and Garbage collection, public education | DoE/WMD | Roger Merritt, Associate Director<br>Waste Management Division<br>REMerritt@co.pg.md.us<br>301-780-6315 | Marilyn Rybak, Section Head, Recycling<br>301-883-6081 |
| Property Management and Maintenance | | | |
| SWPPP | DoE/SMD | George Nicol, Section Head<br>Inspection and Compliance Section<br>gsnicol@co.pg.md.us<br>301-883-5976 | Kemba Saibou, Planner III<br>Inspection and Compliance Section<br>ksaibou@co.pg.md.us<br>301-883-5958 |
| Street Sweeping | DPW&T/OHMD | Gwen Clerkley, Associate Director<br>Office of Highway Maintenance<br>gtclerkley@co.pg.md.us<br>301-499-8522 | Michael Brown, Division Chief<br>Special Service Division<br>mobrown@co.pg.md.us<br>301-499-8520 |
| Storm Drain Maintenance | DPW&T/OHMD | Gwen Clerkley, Associate Director<br>Office of Highway Maintenance<br>gtclerkley@co.pg.md.us<br>301-499-8522 | Vernon Stinnett, Division Chief<br>Storm Drainage Maintenance Division<br>vlstinnett@co.pg.md.us<br>301-499-8520 |

| TABLE A1, CONTINUED<br>KEY PRINCE GEORGE'S COUNTY STAFF | | | |
|---|---|---|---|
| **Permit Condition** | **Responsible Party** | | |
| | **Department/ Division** | **Manager, Title/ E-mail Address, Telephone** | **Technical Personnel, Title/ E-mail Address, Telephone** |
| Vegetation Management | DPW&T/OHMD | Gwen Clerkley, Associate Director<br>Office of Highway Maintenance<br>gtclerkley@co.pg.md.us<br>301-499-8522 | Michael Brown, Division Chief<br>Special Service Division<br>mobrown@co.pg.md.us<br>301-499-8520 |
| Roadside Litter Control | DPW&T/OHMD | Gwen Clerkley, Associate Director<br>Office of Highway Maintenance<br>gtclerkley@co.pg.md.us<br>301-499-8522 | Michael Brown, Division Chief<br>Special Service Division<br>mobrown@co.pg.md.us<br>301-499-8522 |
| Snow and Ice Control | DPW&T/OHMD | Gwen Clerkley, Associate Director<br>Office of Highway Maintenance<br>gtclerkley@co.pg.md.us<br>301-499-8522 | See program manager |
| Public Education | | | |
| Community Outreach and Education | DoE/SID | Deborah Weller, Planner IV<br>Community Outreach Promoting Empowerment<br>dmweller1@co.pg.md.us<br>301-883-7161 | See program manager |
| | DoE/Director Office | Linda Lowe, Public Information Specialist<br>Communications & Community Engagement Section<br>lmlowe@co.pg.md.us<br>301-883-5952 | See program manager |
| **Restoration Plans and TMDL** | | | |
| Watershed Assessments | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | See program manager |
| Restoration Plans | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Outsourced |
| Public Participation | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | See program manager |
| **TMDL Compliance** | | | |
| Water Quality Retrofits | DoE/SMD | Frank Galosi, Section Head<br>Capital Projects Design Section<br>flgalosi@co.pg.md.us<br>301-883-5876 | See program manager |
| Construction of SWM Retrofits | DoE/SMD | Dan Rybak, Section Head<br>Capital Projects Construction Section<br>dorybak@co.pg.md.us<br>301-883-5980 | See program manager |

| TABLE A1, CONTINUED<br>KEY PRINCE GEORGE'S COUNTY STAFF | | | |
|---|---|---|---|
| **Permit Condition** | **Responsible Party** | | |
| | **Department/ Division** | **Manager, Title/ E-mail Address, Telephone** | **Technical Personnel, Title/ E-mail Address, Telephone** |
| Program Evaluation | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | See program manager |
| **Assessment of Controls** | | | |
| Watershed Restoration Assessment | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Outsourced |
| Stormwater Management Assessment | DoE/SMD | Jerry Maldonado, Section Head<br>Environmental Programs Section<br>jgmaldonado@co.pg.md.us<br>301-883-5943 | Outsourced |
| **Program Funding** | | | |
| | DoE/ASD | Michelle Russell, Associate Director<br>Administrative Services Division<br>mwrussell@co.pg.md.us<br>301-952-3954 | Rushane Jones, Budget Analyst<br>Budget and Procurement Section<br>rmJones1@co.pg.md.us<br>301-883-5808 |

## *DEPARTMENT ADDRESSES:*

| | |
|---|---|
| *DoE/DO:* | *Department of the Environment, Director's Office*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SMD:* | *Department of the Environment, Stormwater Management Division (SMD)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SMD/CPDS:* | *Department of the Environment, SMD, Capital Projects Design Section (CPDS)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SMD/CPCS:* | *Department of the Environment, SMD, Capital Projects Construction Section (CPCS)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SMD/I&CS:* | *Department of the Environment, SMD, Inspection & Compliance Section (I&CS)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SMD/EPS:* | *Department of the Environment, SMD, Environmental Programs Section (EPS)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SID:* | *Department of the Environment, Sustainable Initiatives Division (SID)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SID/ESS:* | *Department of the Environment, SID, Engineering Services Section (ESS)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SID/COPE:* | *Department of the Environment, SID, Community Outreach Promoting Empowerment Section (COPE)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SID/R&DS:* | *Department of the Environment, SID, Research & Development Section (R&DS)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/SID/PSS:* | *Department of the Environment, SID, Program Support Section (PSS)*<br>1801 McCormick Drive, Suite 500, Largo, MD 20772 |
| *DoE/WMD:* | *Department of the Environment, Waste Management Division (WMD)*<br>3500 Brown Station Road, Upper Marlboro, MD 20774 |
| *DPW&T:* | *Department of Public Works and Transportation (DPW&T)*<br>9400 Peppercorn Place, Third Floor, Largo, MD 20774 |
| *DPW&T/OEPM:* | *Department of Public Works and Transportation, Office of Engineering & Project Management (OEPM)*<br>9400 Peppercorn Place, Third Floor, Largo, MD 20774 |
| *DPW&T/OHMD:* | *Department of Public Works and Transportation, Office of Highway Maintenance Division (OHMD)*<br>8400 D'Arcy Road, Forestville, MD 20747 |
| *DPIE:* | *Department of Permitting, Inspections and Enforcement (DPIE)*<br>9400 Peppercorn Place, First Floor, Largo, MD 20774 |
| *HD/EED*: | *Health Department, Environmental Engineering Division*<br>9201 Basil Court, Suite 318, Largo, MD 20774 |

**FIGURE A1**
**DEPARTMENT OF THE ENVIRONMENT – OFFICE OF THE DIRECTOR ORGANIZATIONAL CHART**

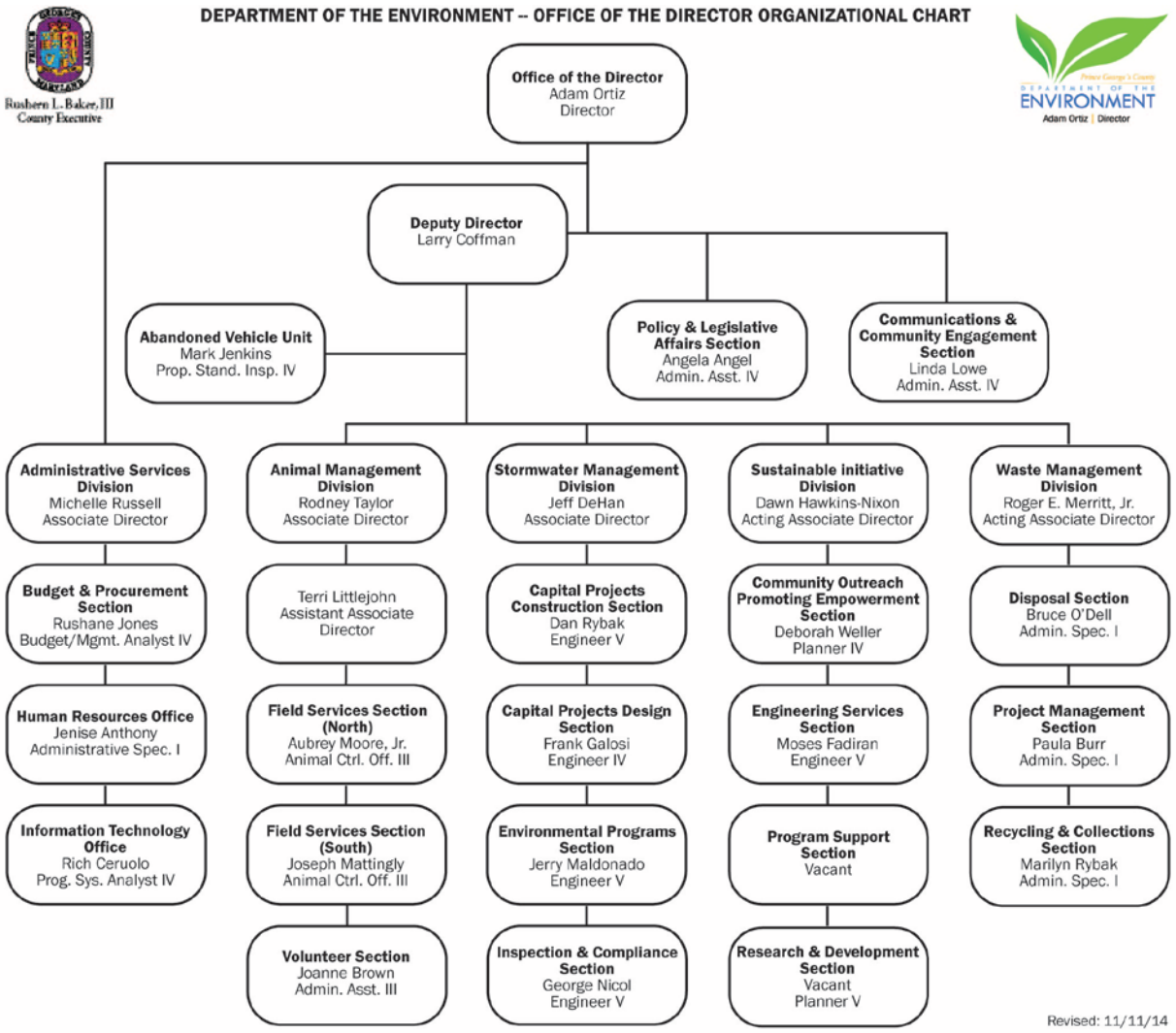


**FIGURE A2**
**DEPARTMENT OF THE ENVIRONMENT – STORMWATER MANAGEMENT DIVISION ORGANIZATIONAL CHART**

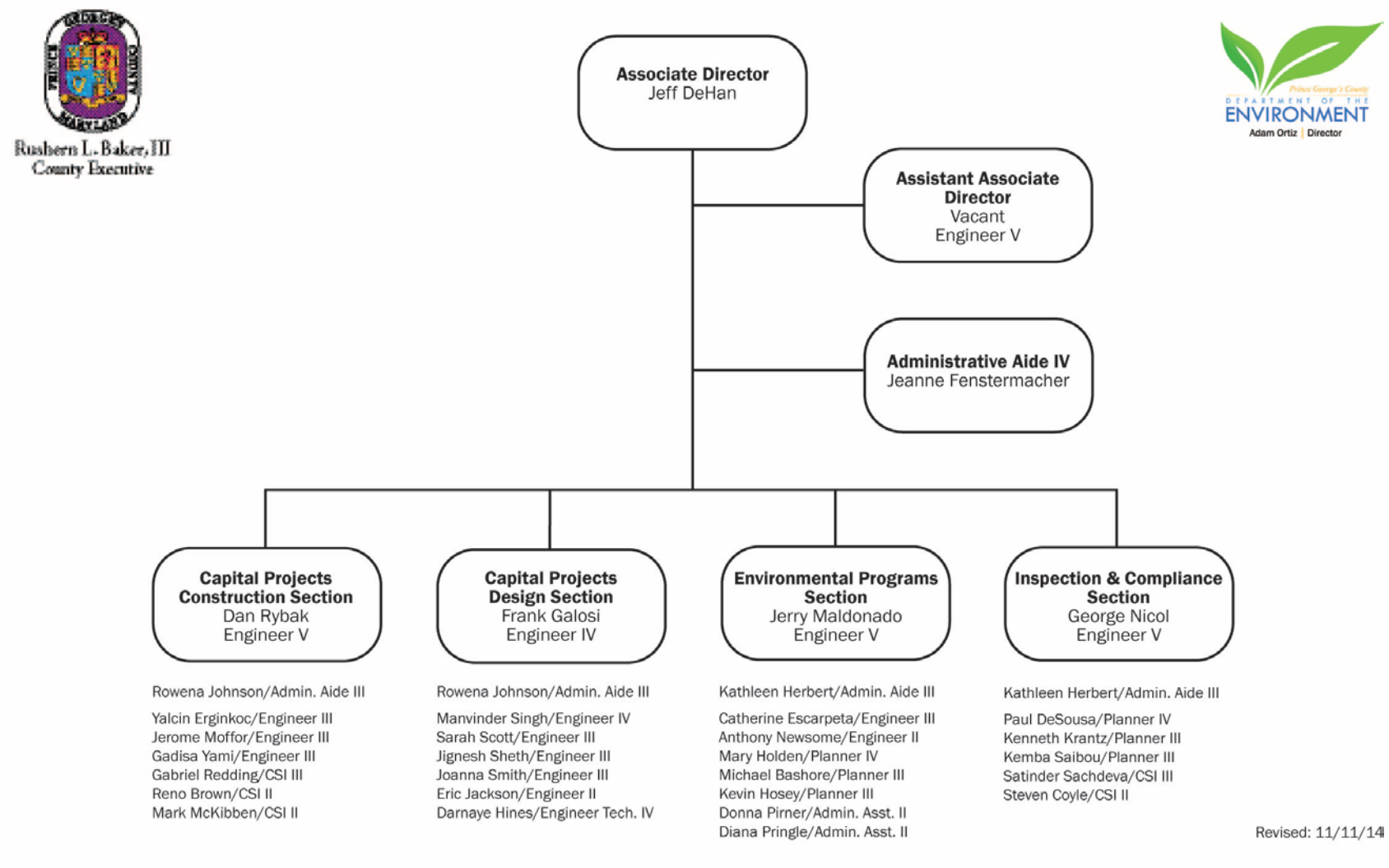


**FIGURE A3**
**DEPARTMENT OF THE ENVIRONMENT – SUSTAINABLE INITIATIVES DIVISION ORGANIZATIONAL CHART**

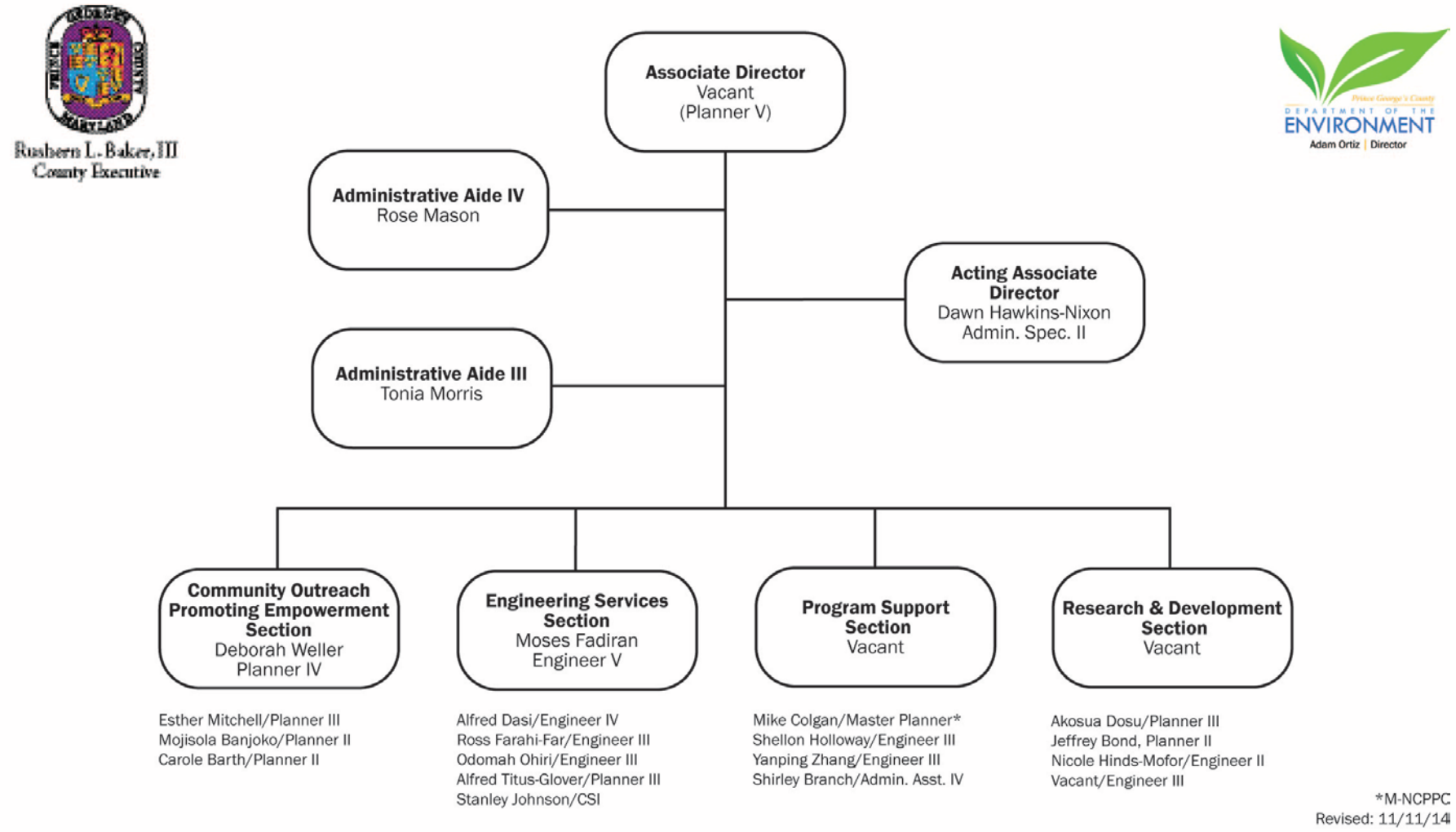


**FIGURE A4**
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION – OFFICE OF THE DIRECTOR ORGANIZATIONAL CHART**

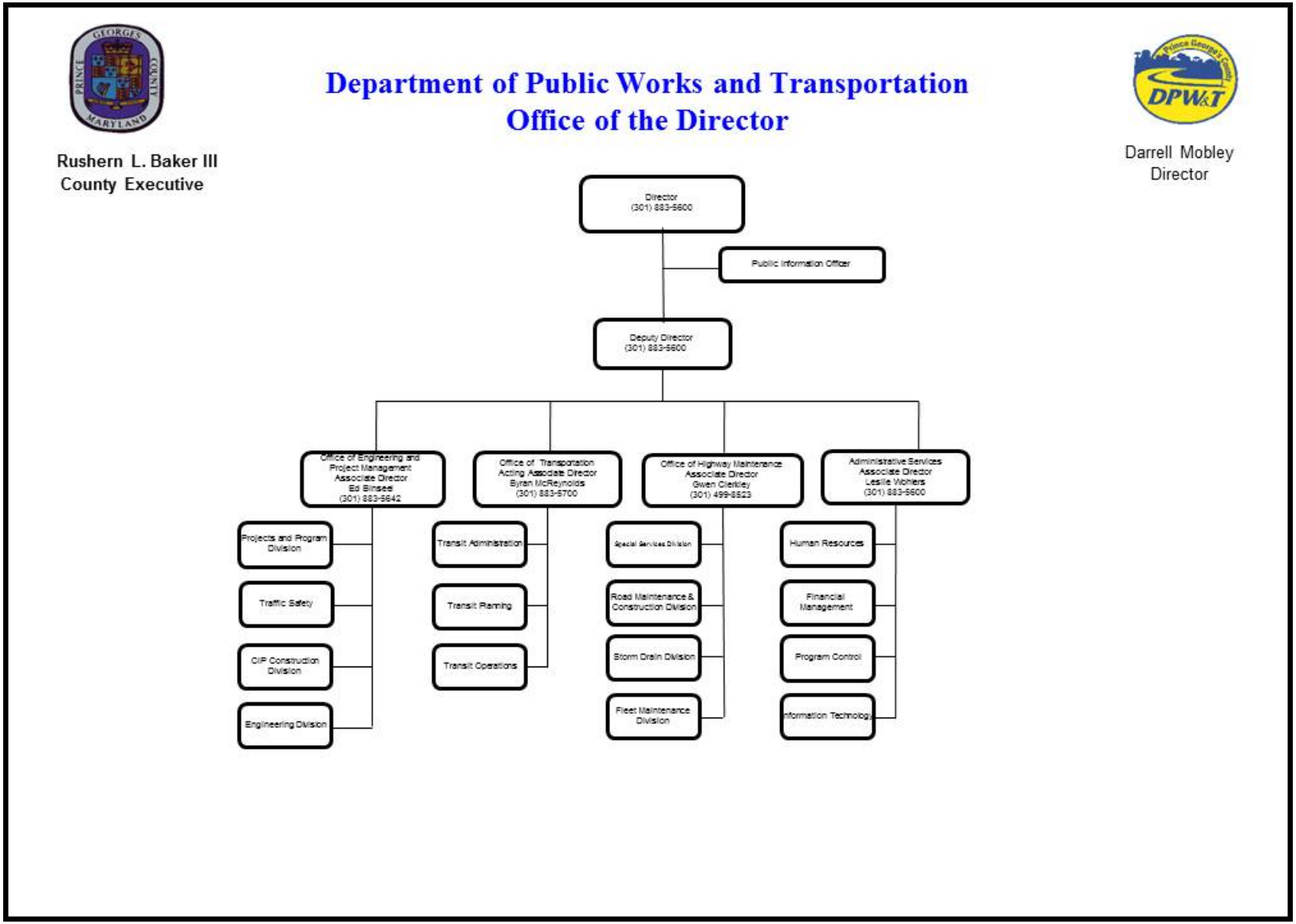


**FIGURE A5**
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION – OFFICE OF HIGHWAY MAINTENANCE DIVISION (OHMD) ORGANIZATIONAL CHART**

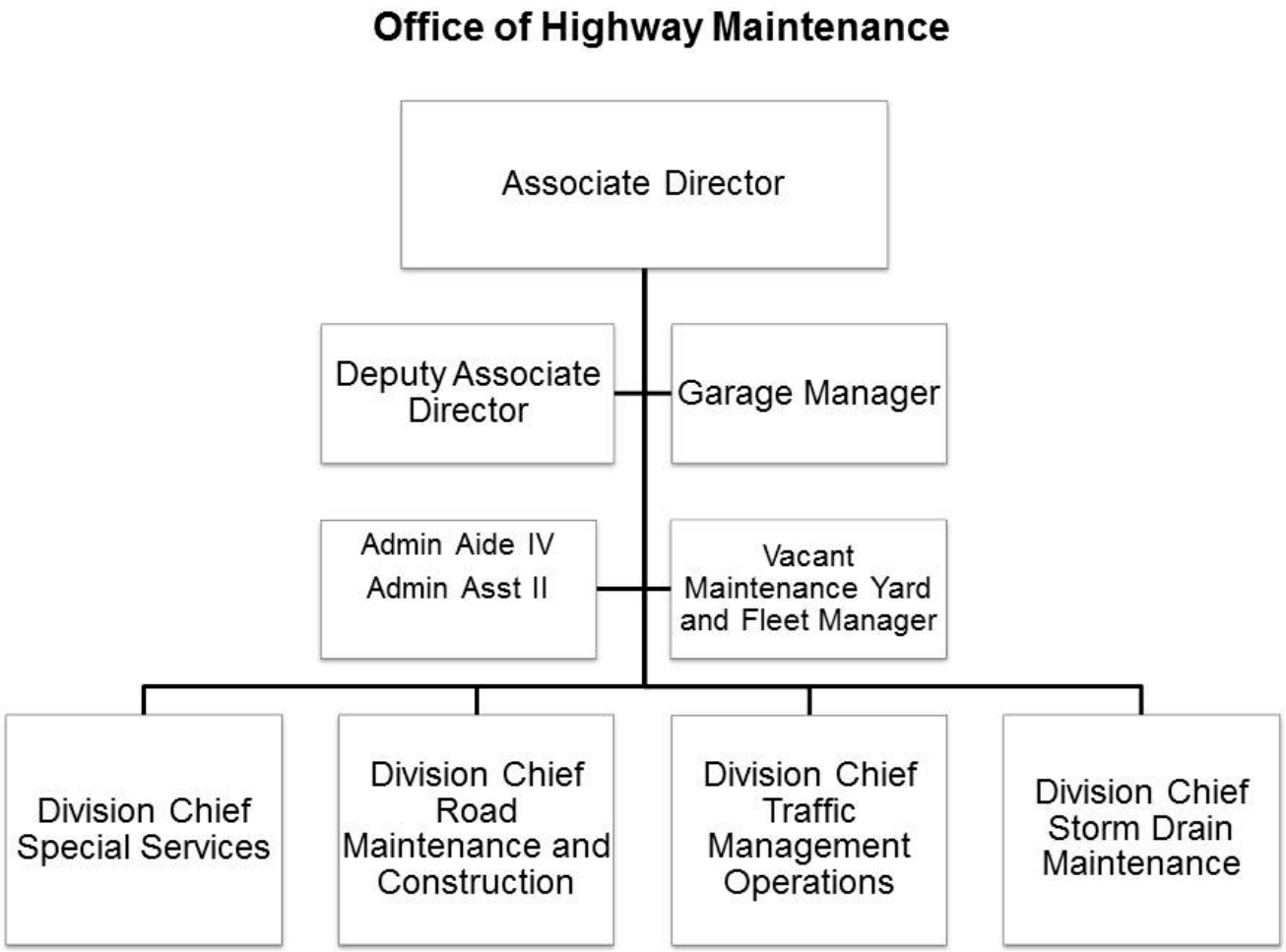


**FIGURE A6**
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION, OHMD – STORM DRAIN MAINTENANCE DIVISION ORGANIZATIONAL CHART**

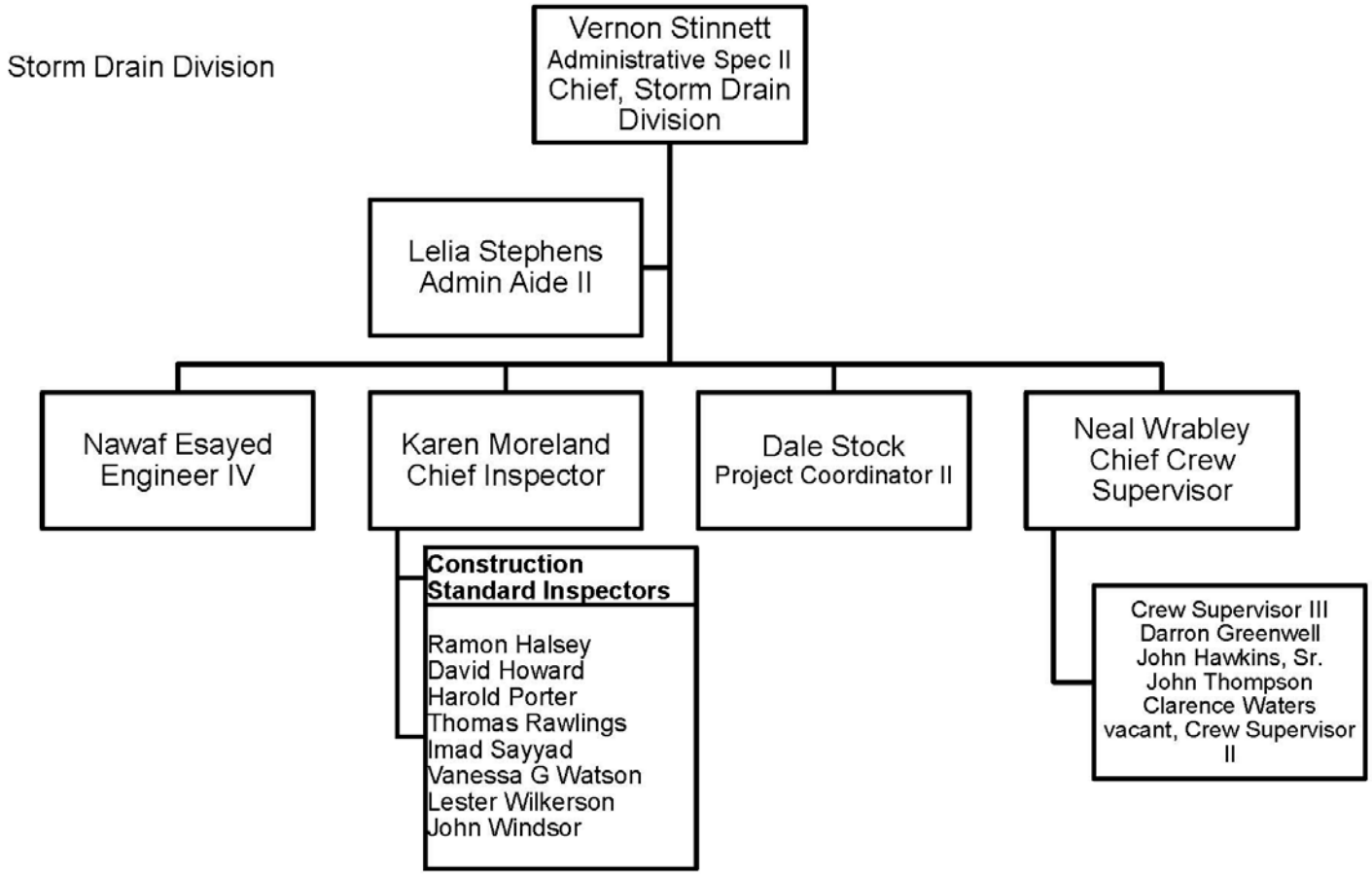


**FIGURE A7**
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION – OFFICE OF ENGINEERING & PROJECT MANAGEMENT ORGANIZATIONAL CHART**

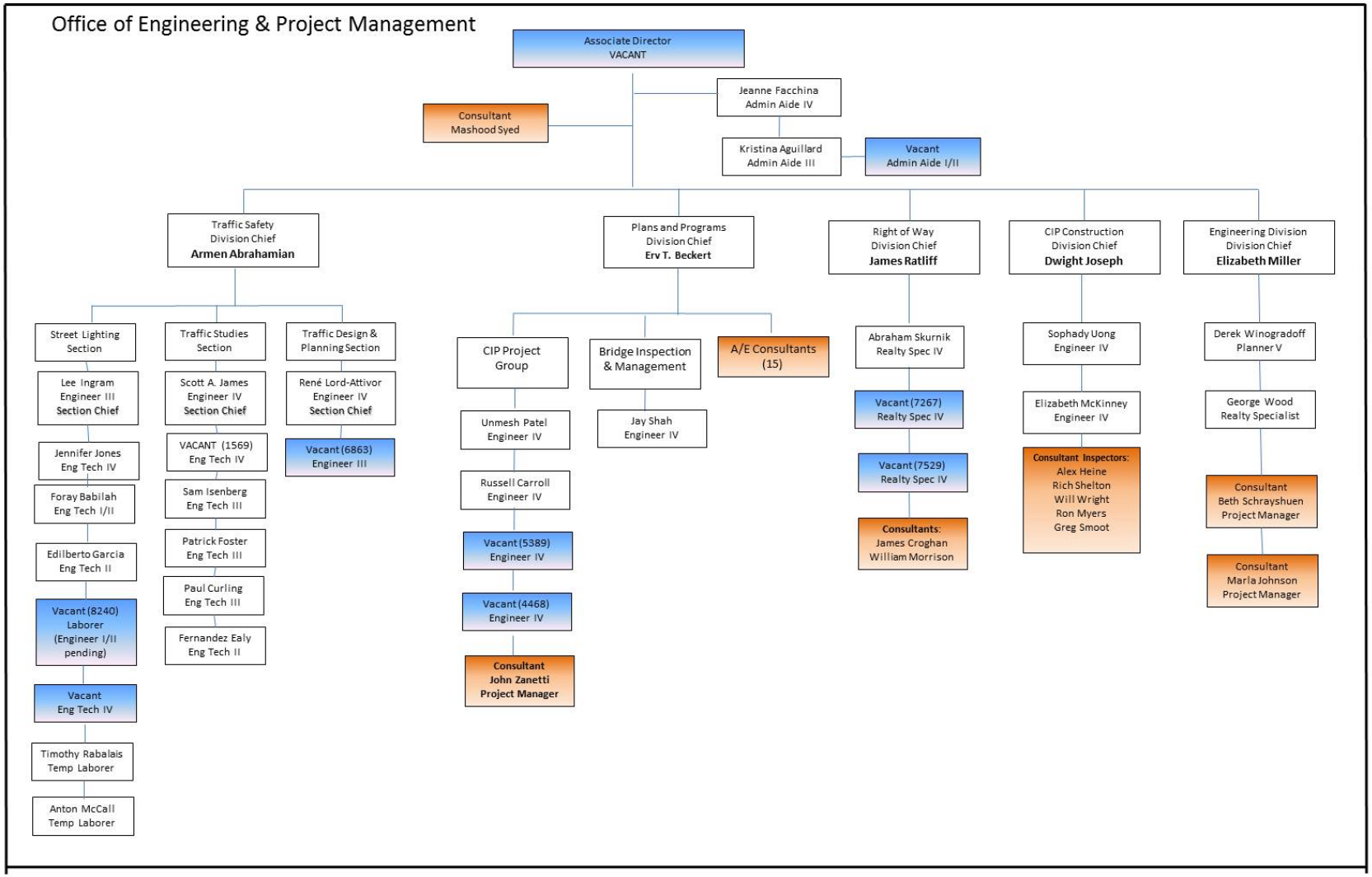


**FIGURE A8**
**DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT – ORGANIZATION AND STAFFING ANALYSIS SUMMARY, OFFICE OF THE DIRECTOR**

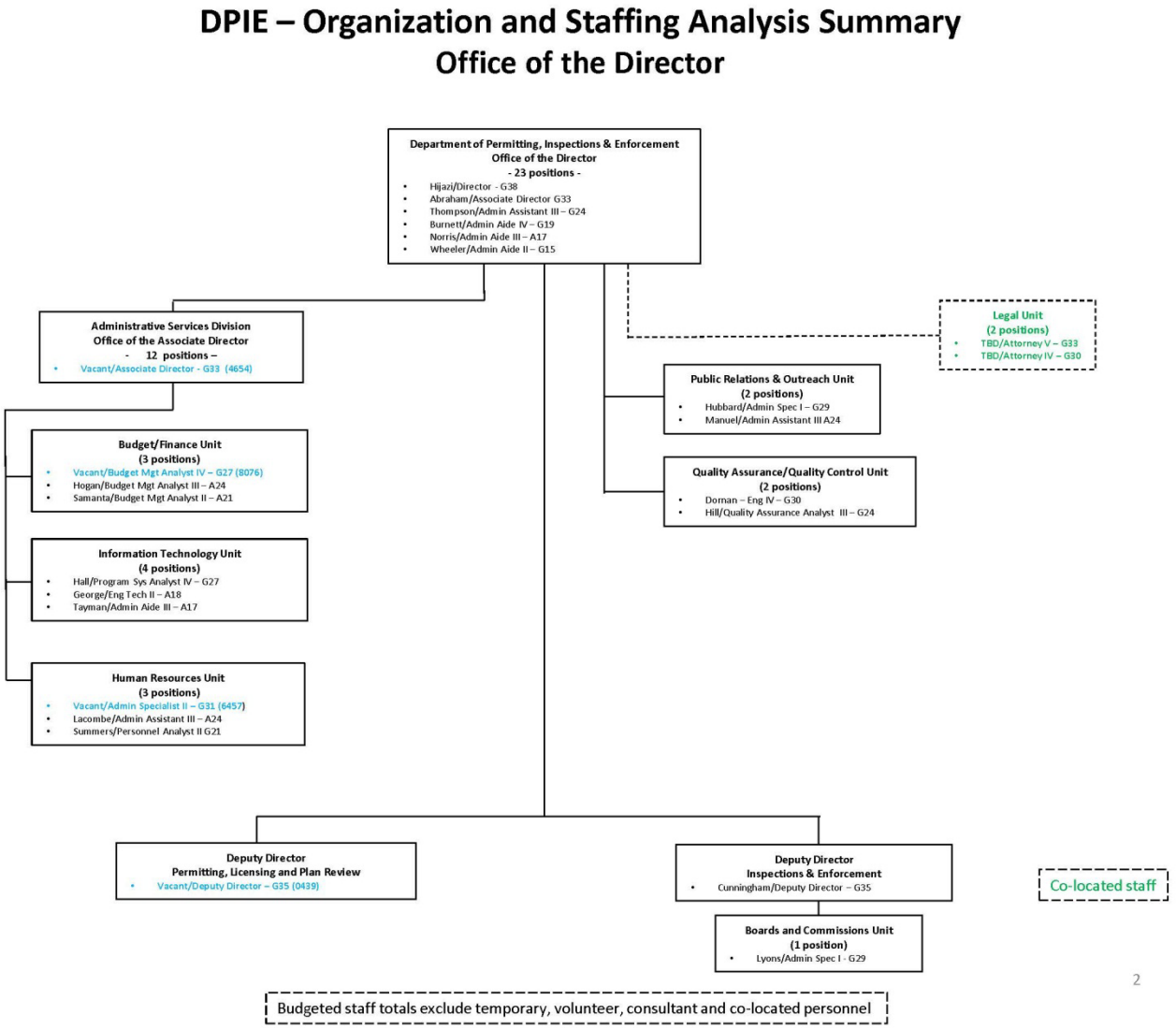


**FIGURE A9**
**DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT – ORGANIZATION AND STAFFING ANALYSIS SUMMARY, DIVISION OF PERMITTING & LICENSING**

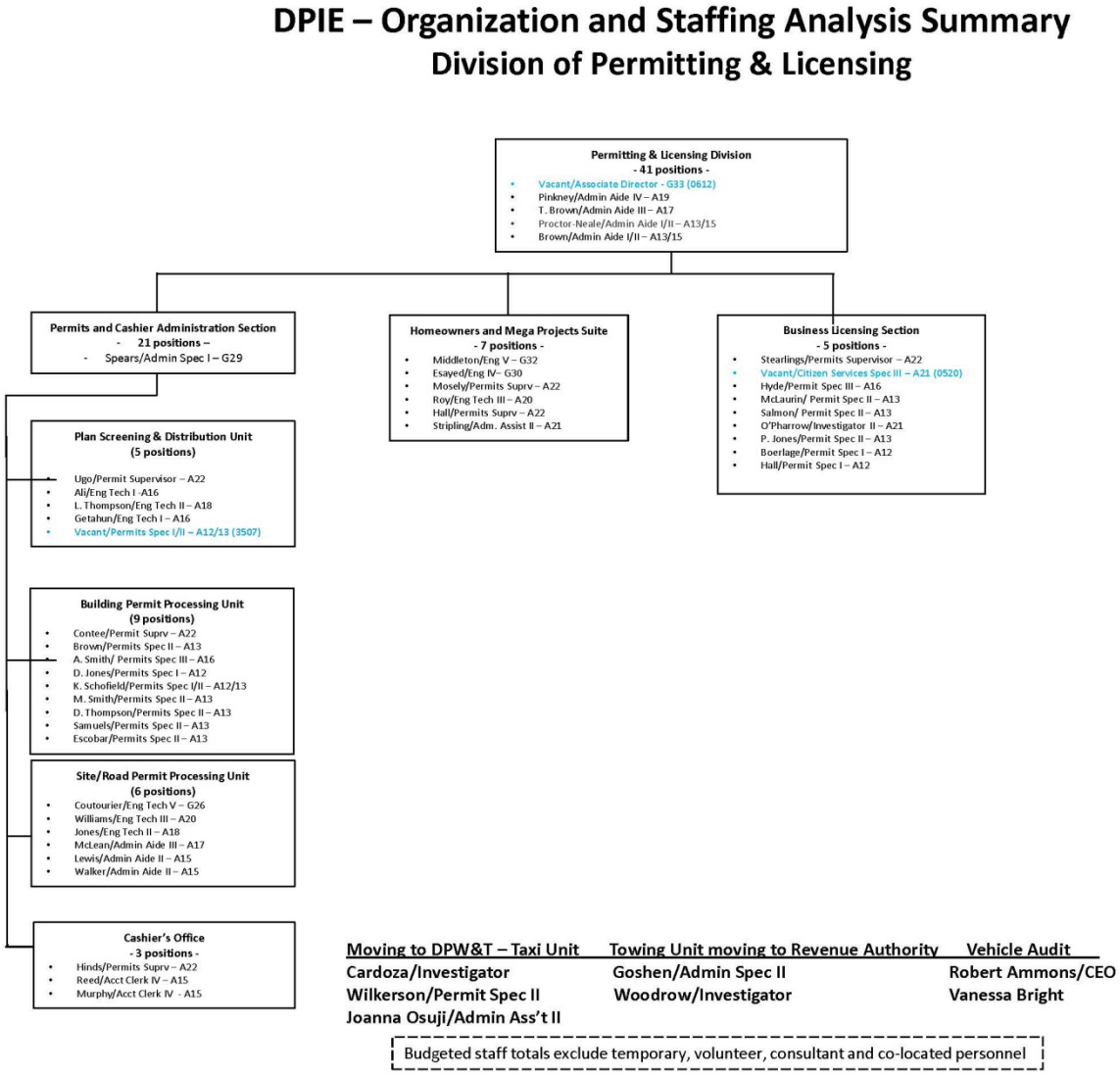


**FIGURE A10**
**DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT – ORGANIZATION AND STAFFING ANALYSIS SUMMARY, DIVISION OF SITE/PLAN REVIEW**

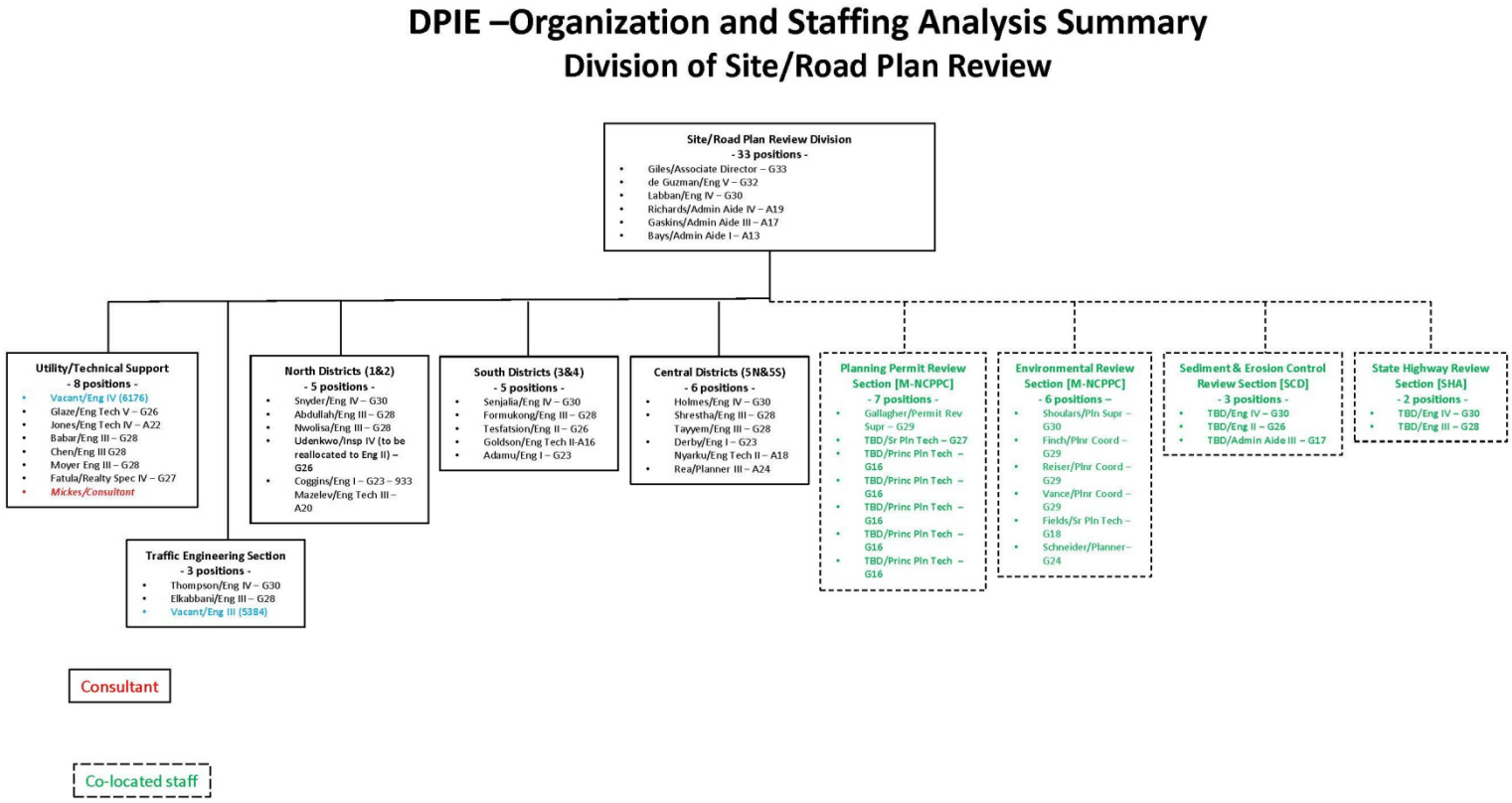


**FIGURE A11**
**DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT – ORGANIZATION AND STAFFING ANALYSIS SUMMARY, DIVISION OF BUILDING PLAN REVIEW**

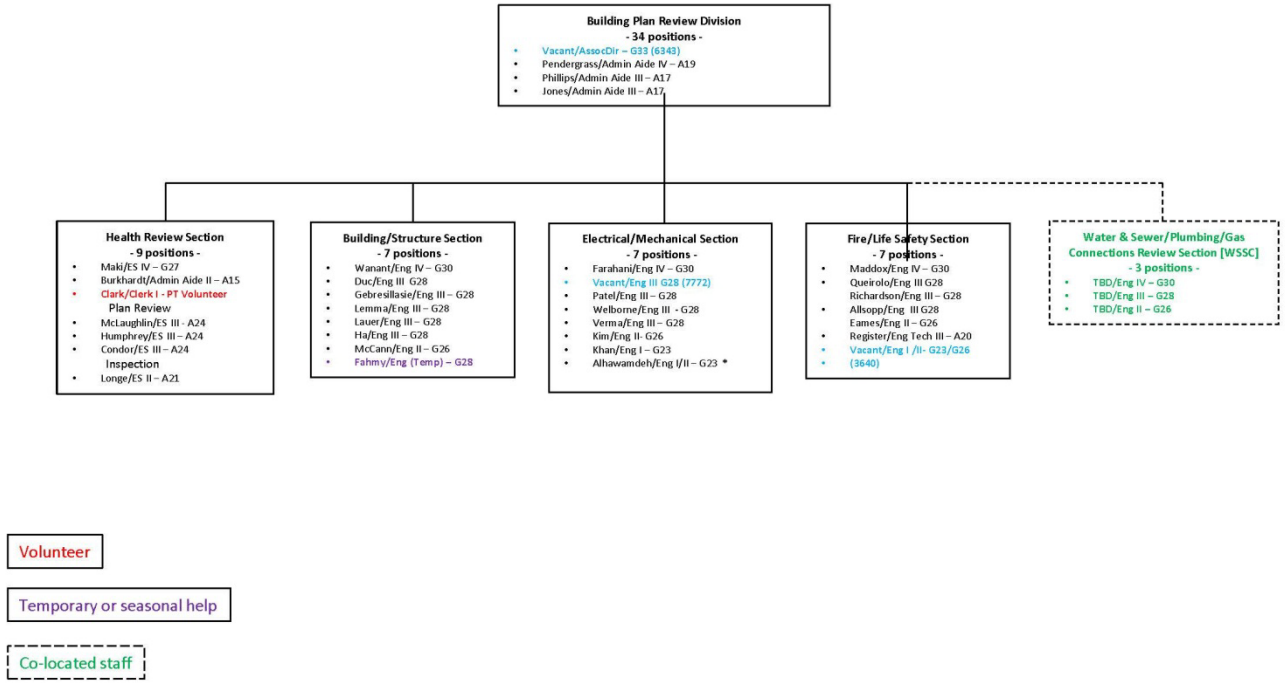


**FIGURE A12**
**DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT – ORGANIZATION AND STAFFING ANALYSIS SUMMARY, DIVISION OF INSPECTIONS**

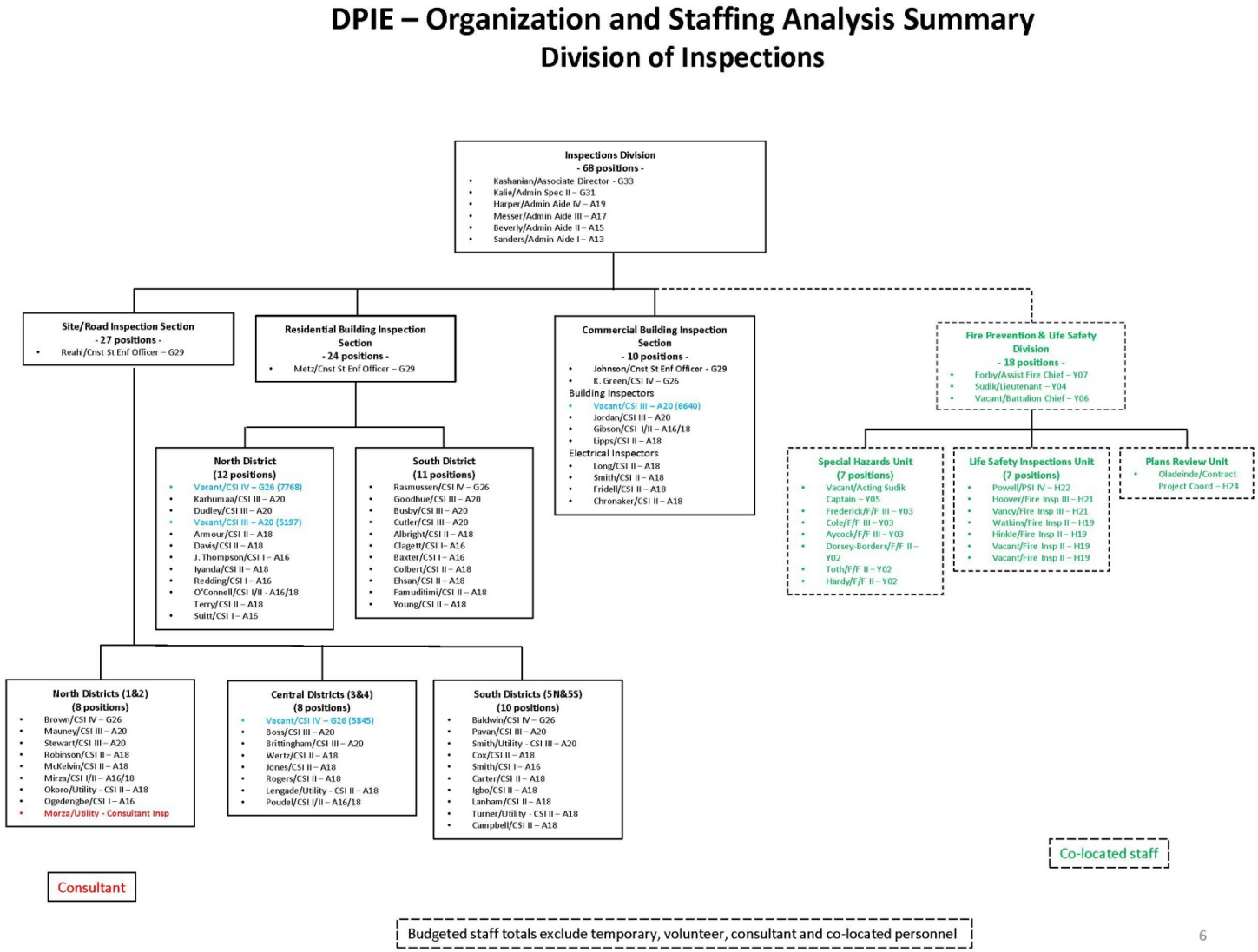
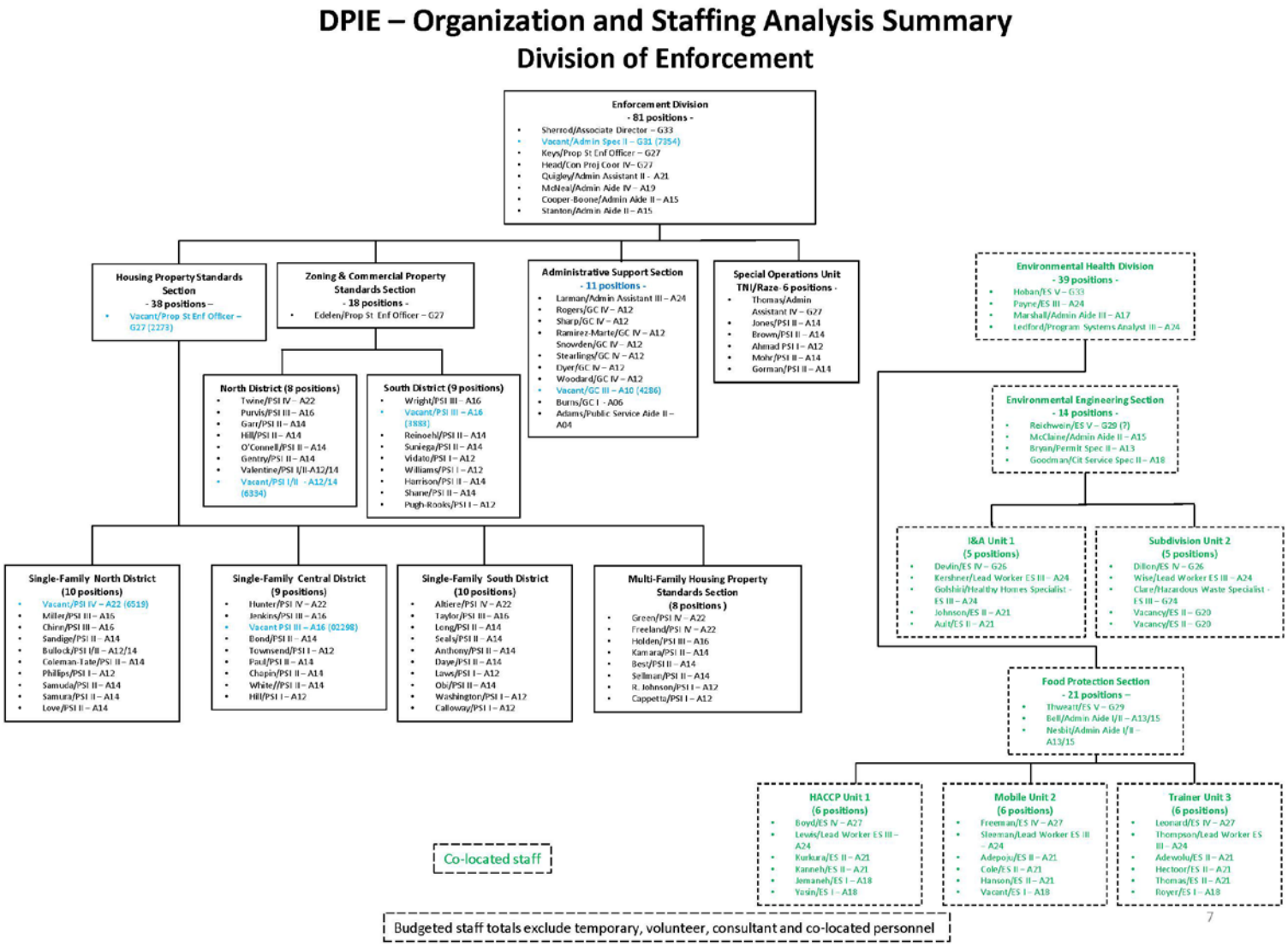


**FIGURE A13**
**DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT – ORGANIZATION AND STAFFING ANALYSIS SUMMARY, DIVISION OF ENFORCEMENT**



# B. LEGAL AUTHORITY

In 1993, Prince George's County revised its "Grading, Drainage and Erosion Control" Ordinance to provide the County with adequate legal authority to directly perform the activities described in 40 CFR 122.26(d)(2)(i). Legal authority was recertified by our County Attorney in 1999, and was accepted by MDE.

Prince George's County continues to maintain adequate legal authority throughout the term of this NPDES MS4 Permit. There were no changes made during this reporting period to invalidate our legal authority.

# C. SOURCE IDENTIFICATION

## 1. STORM DRAIN SYSTEM

In 2014, the County reconciled the desktop storm drain inventory that was found to be corrupt in 2012. For this reporting period, the County is reporting 57,697 records for infrastructure (manhole, inlet, and outfall) points. Through consultants and internal production, the County has added 1,884 infrastructure points between January 1, 2012 and December 18, 2014 to the inventory. The County is reporting 57,697 pipes in 2014. The County has added 19,549 records to the pipe inventory. The County is reporting 5,021 outfall drainage areas in 2014.

Major outfalls and their associated drainage areas are also being reported per Attachment A of the NPDEs permit. The County is reporting 3,127 major outfalls and 1,705 major outfall drainage areas. The County is converting outfall drainage areas from the old format to the latest ArcGIS, and associate these drainage areas to the outfall ID's. This work is done through consultants and should be completed within 60 days. Major outfall drainage area polygons will be determined through geospatial analysis. The procedure used for any outfall drainage area polygon that intersected a pipe that was equal to or greater than 36 inches, an elliptical pipe with dimensions 29 inches x 45 inches and greater, or that was within 200 feet of a stream was selected to be a major outfall drainage area polygon. A complete SDI, point attributes and drainage area shapefiles are provided on DVD, Source Identification\Storm Drain System.

The County recognizes the need for a comprehensive analysis of the storm drain system that will reconcile all storm drain infrastructure (pipes, inlets, manholes, outfalls) with the actual field assets. As the agency responsible for managing these public assets, DPW&T, has initiated the formulation of a Proposal Analysis Group (PAG) with the objective of performing a systemic evaluation of our existing system and cataloging the current condition of the storm drain infrastructure. Additionally, the PAG will be utilized to georeference structure and pipe data to support countywide stormwater management programs.

The following is a proposed schedule to complete a storm drain inventory and assessment:

- October 15, 2014 – PAG approval received
- October 15, 2014 – December 15, 2014 – Develop an Invitation for Consultant Services
- December 15, 2014 – June 15, 2016 – Selection of Consultant for beginning work and issuing Notice to Proceed (18 month process)
- July 15, 2016 – Inventory and assessment process begins
- July 15, 2018 – Inventory and assessment program complete

Preliminary Estimated Budget:

- Selection process and preliminary investigative work: $250,000
- Completion of the work: $3,000,000

## 2. INDUSTRIAL AND COMMERCIAL SOURCES

In the fall of 2013, the County invited consultant firms to submit a task proposal in support of the County's MS4 Inspections and Enforcement Program (IEP) requirements. The consultant firms would provide the County with inspection and reporting services required to comply with the County's NPDES permit MS4 for the durations of the NPDES regular 5 year cycle term. The County evaluated the task proposals and selected KCI Technologies Inc.,

in 2014 to support the MS4 IEP objectives by the County. KCI is tasked to perform BMP, outfall, and water quality inspections as mandated by the NPDES MS4 tri-annual inspections requirements. Additionally, KCI will be developing Standard Operating Procedures specific to the County, developing an automated tool to manage MS4 inspections, conducting inspections, and developing reports for the County's annual NPDES report.

## 3. URBAN BEST MANAGEMENT PRACTICES (BMP)

The County has used a three step process to bring the BMP inventory up to date. The first step is to identify all projects completed between the third quarter of 2011 through the first quarter of 2013 and enter all site and BMP data into the database. In addition, stormwater management records completed prior to the third quarter of 2011 were researched to ensure their inclusion, as well as the completeness of their information in the BMP database. In total, 134 new development sites with 774 associated BMPs were added to the BMP inventory database under this step.

The second step created GIS-based drainage area delineations and reported missing drainage area data for the 342 records that were missing area in the 2012 submission and new records created in step one. The completion of this step resulted in the addition of 1019 new drainage areas to the BMP inventory database. Four hundred and four (404) of these new drainage areas were associated with the 342 records missed in the 2012 submission.

The third step was to capture and report missing as-built data for 435 records missing as-built data in the 2012 submission. The as-built dates for these records were populated based on the County's construction completion notification date, or as-built certification date found on as-built plan sets. In cases where neither of these dates were available, structures were verified as constructed based on aerial and/or site investigations, and an as-built date, based on the County's stormwater management approval date was estimated. A complete dataset per Table B, Attachment A of the NPDES permit is provided on DVD, Source Identification\Urban BMP.

## 4. IMPERVIOUS SURFACES

The County has completed the analyses needed to report the impervious surfaces database. The MS4 regulated permit area and associated impervious area has been completed and a description of the methodology utilized and the geodatabase was provided in the previous reporting. Using the updated BMP database, the County was able to produce the shapefiles required in Table C, Attachment A of the NPDEs permit. Each shapefile has the column name per Table C footnote 1 (GIS shapefile required). Each shapefile has the type of impervious acreage defined by the Description in Table C. A complete dataset is provided on DVD, Source Identification\Impervious surfaces.

## 5. MONITORING LOCATIONS

The established chemical and biological, and physical monitoring locations for stormwater monitoring in the Black Branch watershed and watershed restoration monitoring in the Bear Branch watershed are provided on DVD, Assessment of Controls.

## 6. WATER QUALITY IMPROVEMENT PROJECTS

The location, drainage area shapefile and description of each of the County's watershed water quality improvement projects are provided on DVD, Source Identification\Water Quality Improvement Project.

# D. MANAGEMENT PROGRAMS

## 1. STORMWATER MANAGEMENT PROGRAM

### *STORMWATER MANAGEMENT DESIGN MANUAL REVISION*

The 2014 Stormwater Management Manual was introduced on October 14, 2014 to the County Council under Resolution CR-96-2014. (This manual was subsequently adopted on November 12, 2014.)

### *SPECIFICATIONS AND STANDARDS REVISIONS*

The County is in the process of revising "Specifications and Standards for Highways and Bridges" and "Standard Details for Stormwater Management Construction" into a single document. The purpose of the revision is to compile all drainage details and standards into one document, update current standards and to remove design impediments to green street design and environmental site design (ESD) to the maximum extent possible (MEP). DPW&T will work closely with DPIE, DoE, Prince George's Soil Conservation District (PGSCD), and M-NCPPC to ensure completeness. The process will also entail legislative review and County Code adjustments. It is anticipated that the revisions will be completed during the FY 2016 reporting year.

### *STORMWATER MANAGEMENT PROGRAMMATIC TRACKING*

The County incorporated MDE's three phase comprehensive review for all new and redevelopment projects, in accordance with the processes established in the Prince George's County Stormwater Management Design Manual and the Prince George's Soil Conservation District Soil Erosion and Sediment Control-Pond Safety Reference Manual. As critical decisions on stormwater controls are implemented at the Concept Plan approval phase, the County has prioritized the development of a geodatabase to track stormwater implementation policy decisions, maintenance responsibility, watershed location, and types of BMPs at this stage of the development process. The geodatabase also has the capacity for tracking new and redevelopment activities to ensure all projects evaluate ESD practices as a first option in controlling stormwater. A copy of the geodatabase is provided on DVD, Management Programs/Stormwater Management/Development Program.

The geodatabase will provide the County with a tool to identify development trends and track progress in implementing ESD to the MEP. The County conducted an extensive analysis of stormwater controls approved at the Concept Plan stage of the development process, with a representative example of the type of data analysis possible provided in Table D1.

| TABLE D1<br>STORMWATER MANAGEMENT CONCEPT PLAN APPROVALS BY WATERSHED | | | | |
|---|---|---|---|---|
| **MDE 8-digit code** | **Watershed Name** | **Number of Plans** | **Disturbed Area (Acres)** | **Proposed Impervious Area (Acres)** |
| 02140205 | Anacostia River | 15 | 10.4 | 4.8 |
| 02131103 | Western Branch | 14 | 77.5 | 18.6 |
| 02131104 | Patuxent River Upper | 7 | 35.3 | 16.0 |
| 02140201 | Potomac River Upper (Tidal) | 7 | 8.3 | 4.0 |
| 02140203 | Piscataway Creek | 6 | 56.7 | 20.5 |
| 02140111 | Mattawoman Creek | 3 | 37.5 | 17.2 |
| 02140204 | Oxon Run | 2 | 8.4 | 5.0 |
| 02131102 | Patuxent River Middle | 1 | 5.2 | 1.5 |
| 02131101 | Patuxent River Lower | 0 | 0 | 0 |
| 02131107 | Rocky Gorge | 0 | 0 | 0 |
| 02140102 | Potomac River Middle (Tidal) | 0 | 0 | 0 |
| 02140108 | Zekiah Creek | 0 | 0 | 0 |

A summary of the stormwater controls approved during the concept plan approval phase is provided below:

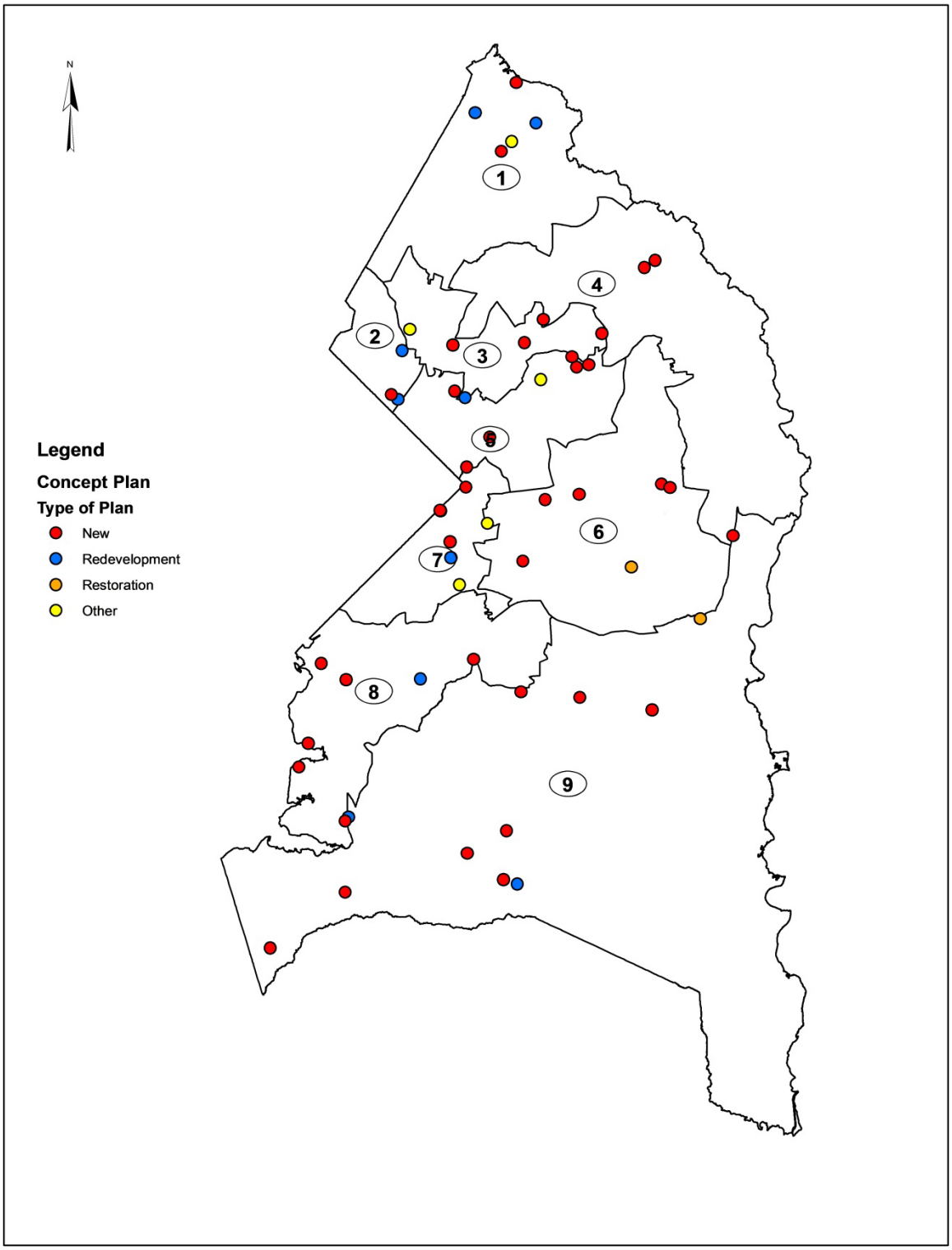
- 55 Concept Plans approved
- 236 BMPs associated with the 55 Concept Plan approvals, of which, 230 BMPs will be privately maintained and 6 will be publicly maintained
- 43 Site Development Plans reviewed
- 47 Final Plans reviewed
- 10 Redevelopment Projects
- 20 Stormwater Exemptions granted
- 3 waivers requested and granted for qualitative and quantitative control

The development of the geodatabase will also be utilized to meet the internal reporting mandates of Subtitle 32 of the Prince George's County Code:

> **Sec. 32-201. Annual Report.**
> Starting in 2013, the Department shall issue an annual report and analysis by December 31st to the County Executive and the County Council on the implementation of and compliance with the stormwater management provisions contained in this Division, including projects that received administrative waivers under Section 32-170 (d), incentives under Section 32-175 (e) and variances under Section 32-176.

As shown in Figure D1, the mapping capabilities of the geodatabase also provide staff with an excellent tool for the required annual stormwater program reporting to the County Council.

**FIGURE D1**
**STORMWATER MANAGEMENT CONCEPT PLAN APPROVALS BY COUNCILMANIC DISTRICTS**
**(01/01/2014 – 6/30/2014)**



### *STORMWATER MANAGEMENT CONSTRUCTION INSPECTIONS AND ENFORCEMENT ACTIONS*

Inspections are performed within three districts. The total number of Site/Road inspectors for FY2014 was 22 who performed a total of 3,839 stormwater inspections and issued 24 violations during this reporting period. Staff within the Site/Road Inspections Section shall continue to perform routine and demand inspections, in an effort to gain compliance with the approved plans and permits.

### *POST-CONSTRUCTION BMP INSPECTION AND MAINTENANCE RESPONSIBILITY*

Early in the development process, prior to design, permit or construction, the ownership and maintenance responsibility of all SWM appurtenances are established under Section 32-194 of the County Code. Any SWM measure which serves a single lot or parcel shall be privately owned and maintained with SWM measures relying on vegetated areas or site features shall be privately owned and maintained, unless located on public property. All other stormwater management facilities (SWMFs) shall be publicly owned and maintained.

Local code also assigns the responsibility for conducting preventative maintenance inspections of public infiltration systems, bioretention, retention, or detention structures to DPW&T with the inspection responsibility for privately maintained facilities assigned to the owner of record. DoE is responsible for ensuring that inspection reports for privately maintained facilities comply with the approved maintenance agreement. A "Declaration of Covenants" or maintenance agreement must be recorded in the County's land records prior to the issuance of a Use and Occupancy Permit. Maintenance agreement language explicitly states that the property owner is solely responsible for the construction and perpetual maintenance of the BMP, in accordance with the approved County SWM plan.

#### *PREVENTATIVE MAINTENANCE INSPECTIONS OF PUBLIC FACILITIES*

Recognizing the need for an accurate accounting of all publically maintained ponds, DPW&T entered into a contractual agreement with McCormick Taylor in 2008 to electronically catalog, inspect and provide remedial plan of action, if appropriate, for all publicly maintained ponds in the inventory. During this triennial inspection cycle, the years 2011 through 2014, 308 comprehensive pond inspections were performed by the County's consultant. To expand the capacity of the existing public BMP inspection program to address this deficiency, DPW&T executed a consultant services task order to expand their services by 200 inspections per year. Initially, the County anticipated that full compliance with the triennial inspection mandate could be achieved in calendar year 2015.

In addition to the comprehensive pond inspections conducted through consultant services, DPW&T forces evaluate each pond at the time of twice-yearly pond mowing. At this time, the inspections are not entered into a database so triennial inspection compliance cannot be cataloged according to the unique BMP ID number assigned to each BMP in the Urban BMP database. These evaluations identify common facility maintenance needs which are escalated to a higher level as warranted. Service requests are through a service request process. A copy of the inspection report utilized for these inspections is provided on DVD/Management Programs/ Stormwater Management/Inspections/Public Facilities. The OHMD also investigated approximately 200 citizen requests related to ponds annually. Although the County performs public BMP inspections using three methodologies, comprehensive inspections via contract

services, visual evaluations during mowing and site visits in response to citizen requests, a database linking inspection results to a specific BMP is not yet available.

*PREVENTATIVE MAINTENANCE INSPECTIONS OF PRIVATE FACILITIES*

The County initiated a preventative maintenance inspection program for private facilities in April 2008. Development of a *Stormwater Management BMP Inspection Manual* followed in 2009 with the Standard Operation Procedures (SOPs) developed in 2010. In 2011, field inspection forms and correspondence templates were developed to streamline the inspection process and reflect Subtitle 32 legislative changes. Table D2 provides a summary of annual inspections since the program's inception in 2009.

**TABLE D2**
**PRIVATE BMP INPECTIONS PERFORMED BY PROGRAM YEAR**

| Year | Number of Initial Inspections | Percentage of BMPs Inspected Triennially | Number of Facilities Re-Inspected | Total Number of BMP Inspections |
|---|---|---|---|---|
| 2009 | 78 | 11% | 36 | 114 |
| 2010 | 179 | 22% | 92 | 271 |
| 2011 | 166 | 45% | 80 | 245 |
| 2012 | 60 | 43% | 134 | 194 |
| 2013 | 280 | 72% | 118 | 398 |
| 2014 (01/01/14 – 06/30/14) | 83 | Unavailable* | 40 | 123 |

**The percentage of BMP inspected triennially cannot be determined from a 6 month evaluation of the program. The percentage of BMPs inspected is 72% if the number of inspections is performed during the first 6 months is doubled.*

As of June 30, 2014, the number of private BMPs in the inventory was 701 with an estimated triennial compliance rate of 72% for this reporting year, if the number of inspections performed during the first 6 months of 2014 is doubled. A breakdown of the number and type of facilities inspected during this reporting period is provided in Table D3. Property owner corrective action is indicated for 69% (57 BMPs) of the facilities inspected, which will require County re-inspection to verify compliance. The remaining 31% of the facilities (26 BMPs) inspected were found to be in compliance. The private BMP inspection database is provided on DVD, Management Programs/Stormwater/Management/Inspections/Private Facilities.

In 2014, the County evaluated task proposals submitted by consultant firms in support of the County's MS4 Inspections and Enforcement Program (IEP) requirements. KCI Technologies, Inc. (KCI) of Maryland was selected to support the MS4 IEP objectives by the County. During the reporting period, the County was in the process of contract negotiations with KCI to provide the County with BMP inspection and reporting services required to comply with the County's NPDES permit for the durations of the NPDES regular 5 year cycle term. KCI is tasked with:

- Conducting BMP maintenance inspections,
- Conducting inspections of outfalls,
- Conducting inspections of illicit discharge,
- Developing Standard Operating Procedures that identify the protocols and methods for the data collection, processing, inspections, and enforcement of private BMPs.
- Developing an automated tool to manage the BMP inspections, and
- Developing reports for the County's annual NPDES report.

| TABLE D3<br>NUMBER OF BMP INPECTIONS BY STRUCTURE TYPE (01/01/14 – 06/30/14) | |
|---|---|
| **Structure Type Subcategory** | **Number Inspected** |
| BaySaver | 1 |
| Bioretention | 9 |
| Detention Structure – Dry | 3 |
| Extended Detention Structure – Dry | 3 |
| Grass Swale | 1 |
| Infiltration Trench | 28 |
| Oil-Grit Separator | 10 |
| Retention Pond (Wet Pond) | 5 |
| Sandfilter | 3 |
| Stormceptor® | 18 |
| Underground Storage | 2 |
| **TOTAL** | **83** |

A significant impediment to full compliance with the triennial inspection mandate for private facilities are the 188 single family residential or homeowner association property BMPs, primarily rain gardens, which were constructed without a recorded maintenance agreement. Of the 701 private BMPs in the inventory, 27% were constructed without a recorded maintenance agreement. Without a recorded maintenance agreement, the County does not have the authority to require perpetual maintenance on these BMPs nor do we have the legal authority to enter the property to perform maintenance inspections, a right granted by the maintenance agreement.

A team has been formed to consult with all Homeowner Associations to ascertain whether it is feasible and legally correct to conduct inspection without legal binding document in place. By the next annual report, we should be able to decide whether to delete these BMPs from our database or conduct inspections that have legal backup for enforcement.

## 2. EROSION AND SEDIMENT CONTROL

### *DELEGATION*

In a letter dated March 29, 2013, MDE granted a request for continuing delegation effective through June 30, 2015. MDE's evaluation recognized that the erosion and sediment control regulations have not been updated in the County Ordinance. The updated regulation is tentatively scheduled to be heard by the County Council in early 2015.

Inspections are performed within three districts. The total number of Site/Road inspectors for FY2014 was 22 who performed a total of 5,451sediment control inspections and issued 50 violations during this reporting period. Staff within the Site/Road Inspections Section shall continue to perform routine and demand inspections, in an effort to gain compliance with the approved plans and permits.

### *GREEN CARD PROGRAM*

"Responsible Personnel Certification" courses were conducted by the Inspections Division on June 27, 2014 with 10 people successfully completing the Green Card Certification. The

enrollment information was electronically forwarded to MDE. Copies of the electronic databases forwarded to MDE are provided on DVD, Management Programs/SEC.

### *QUARTERLY EARTH DISTURBANCE REPORT*

During the 2014 reporting period, Prince George's County reported a total of 45 projects with earth disturbances of one acre or more. The total earth disturbance for these 45 projects was 644.89 acres. Copies of the disturbed area databases forwarded to MDE throughout the year are provided on DVD, ManagementPrograms/SEC/DisturbedArea.

## 3. ILLICIT DISCHARGE DETECTION AND ELIMINATION

### *FIELD SCREENING AND OUTFALL SAMPLING*

In partnership with the County's Comprehensive Community Cleanup Program (CCCP), DoE completed field screening on 145 outfalls located within the 11 communities served in the first 6 months of 2014. The outfall screening results are summarized in Table D4. As shown, the number of samples taken have a zero value because there were no discharges observed from these outfalls during the dry weather monitoring events.

**TABLE D4**
**COMPREHENSIVE COMMUNITY CLEANUP OUTFALL SAMPLING SUMMARY (01/01/14-06/30/14)**

| Community | Date(s) of Inspection* | Number of outfalls Screened | Samples Taken | Illicit Discharges Detected |
|---|---|---|---|---|
| Beltsville Phase 1 | 02/24 & 03/11/2014 | 14 | 0 | 0 |
| Beltsville Phase 2 | 03/12/14 | 5 | 0 | 0 |
| Beltsville Phase 3 | 03/27 & 03/28/2014 | 22 | 0 | 0 |
| Beltsville Phase 4 | 04/02 & 04/03/2014 | 21 | 0 | 0 |
| Willow Wood Estates | 04/11, 04/14 and 04/21/2014 | 15 | 0 | 0 |
| Camp Springs Phase 1 | 05/05/2014 | 12 | 0 | 0 |
| Camp Springs Phase 2 | 05/06, 05/07 & 05/08/2014 | 13 | 0 | 0 |
| Camp Springs Phase 3 | 05/20, 05/21 & 06/06/2014 | 15 | 0 | 0 |
| Chillum Ray | 06/16 & 06/24/2014 | 16 | 0 | 0 |
| Eastpines | 06/25/14 | 7 | 0 | 0 |
| Marlboro Meadows Phase 1 | 06/27/14 | 5 | 0 | 0 |
| | **TOTAL** | **145** | **0**** | **0** |

** All inspections performed in 2014.*

*** Samples were not taken because no flow occurred during the reporting period.*

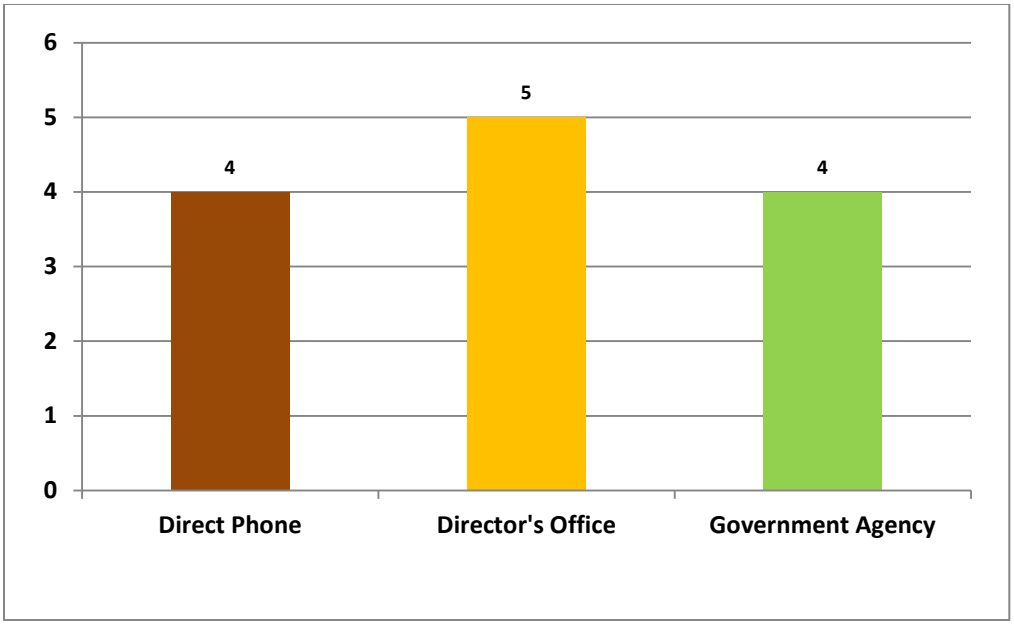
This program is designed to revitalize, enhance, and help maintain unincorporated areas of the County, providing a wide range of clean up and maintenance services to a community over a two-week to one-month period. Outfall sampling serves to detect and eliminate stormwater pollutants and support clean and healthy communities. Inspection results are provided on DVD, Management Programs/IDDE.

### *INVESTIGATION AND ENFORCEMENT PROGRAM*

The County utilizes the full enforcement authority authorized by the County Code to investigate and eliminate illicit discharges. The County Code assigns the authority and responsibility for responding to and eliminating illicit discharges by type, activity or location. For instance, enforcement actions associated with violations involving the improper storage of materials and/or dumping on private property are governed under the Zoning Ordinance and Housing and Property Codes. Environmental enforcement, including disturbed area, grading, sediment and erosion control, is authorized under Subtitle 32. These enforcement responsibilities all fall within the authority of the Inspection and Enforcement Divisions of DPIE. The prevention of human exposure to sewage is administered by the Health Department (HD) in accordance with the On-Site Sewage Disposal Systems regulations and, the control of hazardous chemicals or substances is governed by the Fire Safety Code.

The Inspection and Compliance Section, within the SMD of DoE, receives complaint referrals through the County's 311 system and maintains close communications with environmental organizations throughout the County. In this capacity, DoE staff received 13 complaints during this reporting period through the types of communication summarized in Figure D2. Site investigations are performed on all incoming complaints with the exception of complaints that clearly fall within the purview of another agency, such as sediment and erosion control. To expedite a County response to those complaints, DoE staff immediately refers the investigation and corrective action, if warranted, to the responsible agency.

**FIGURE D2**
**SOURCE OF INCOMING COMPLAINTS**




Water quality infractions were field verified for 9 of the 13 investigations performed by DoE staff. Evidence of an illegal discharge or illicit connection to the storm drain system could not be located for the 4 remaining complaints. Of the 9 valid complaints identified, we were unable to locate the source for 2 complaints, 4 were referred to another agency for enforcement, and 3 were immediately corrected by the responsible party thereby eliminating the need for

formal enforcement action. Table D5 provides a summary of enforcement actions taken by DoE to resolve valid water quality infractions.

**TABLE D5**
**DoE WATER QUALITY VIOLATION ENFORCEMENT ACTIONS**

| Category | No. of Investigations | Unable to Locate Source | Enforcement Action | |
|---|---|---|---|---|
| | | | No. of Cases Resolved Voluntary Compliance | No. of Cases Referred/Referral Agency |
| Improper Disposal of Waste | 2 | 1 | 1 | N/A |
| Sediment | 5 | 2 | 1 | (2) DPIE |
| Sewage | 2 | 0 | 0 | (1) HD (1) WSSC |
| Oil Leak | 1 | 0 | 1 | N/A |
| Vehicle Maintenance | 0 | 0 | 0 | N/A |
| Vehicle Washing | 0 | 0 | 0 | N/A |
| SWM SD Private | 0 | 0 | 0 | N/A |
| SWM SD Public | 1 | 1 | 0 | N/A |
| Other | 2 | 2 | 0 | N/A |
| **TOTAL** | **13** | **6** | **3** | **4** |

*ENVIRONMENTAL ENGINEERING PROGRAM*

The Prince George's County Health Department Environmental Engineering Division (EED) responds to complaints about sanitary sewer overflows, failing septic systems, solid waste and hazardous materials spills/dumping that may impact the waters of the State. During this reporting period, the HD investigated 34 sites to assess threats to local streams and waters of the State from failing septic systems and public sewer overflows.

Understanding the need for more comprehensive reporting, and in response to MDE's Illicit Discharge Detection and Elimination (IDDE) Program comments of the County's 2012 report, the HD is committed to future capturing and reporting of mandated data to meet the permit conditions for the IDDE Program. Starting in FY 2015, an Access database will be utilized to capture information including the nature of the complaint, our response to the complaint and any remedial action that was required. The database will also capture the latitude and longitude of the locations of the sewage overflow, illegal spills and dumping to aid in GIS mapping capabilities in the future. Correspondence in this regard was provided in the 2013 Annual Report.

*ILLEGAL DUMPING AND SPILLS*

The DPW&T responds to illegal dumping that occurs along the public road right-of-way and responds by removing the debris within five working days of notification. In 2013, the County received over 1,500 citizen requests for illegal dumping removal through the County's 311 system. For additional information on the County's road maintenance litter control program see page D-43.

The Prince George's County Fire/Emergency Medical Services Department Hazardous Materials Division (HMD) is responsible for handling the initial response to all hazardous material spills within the County. Between January 1, 2014 and June 30, 2014, the Prince George's County Hazardous Materials Team (HAZMAT) responded to 631 calls for assistance. The number of calls per month is provided in Table D6. Detailed investigation and response information, in the format required by the permit, is not available at this time, but an improved record keeping and reporting strategy is under development. Correspondence in this regard was provided in the 2013 Annual Report.

**TABLE D6**
**HAZMAT CALLS PER MONTH**

| Month | Number |
|---|---|
| January 2014 | 134 |
| February 2014 | 88 |
| March 2014 | 106 |
| April 2014 | 97 |
| May 2014 | 90 |
| June 2014 | 116 |
| **TOTAL** | **631** |

## 4. TRASH AND LITTER PROGRAM: ANACOSTIA TRASH TMDL

EA Engineering, Science, and Technology, Inc. PBC (EA) performed an inventory and analysis and prepared recommendations for improving litter and trash control programs in the Anacostia River watershed. The report entitled, "Effectiveness of the Existing Trash Reduction Programs and Practices in the Anacostia Watershed: Prince George's County, Maryland," assesses the efficacy of existing trash reduction programs and practices and discusses programmatic-scale strengths, general areas for improvement and overall estimates of possible trash reductions if identified gaps are filled. EA Engineering, Inc. has also prepared a draft report entitled, "Implementation Plan for Anacostia River Watershed Trash Total Maximum Daily Load in Prince George's County." A synopsis of the findings and determinations of the reports is provided below. Copies of reports are provided on DVD, Management Programs, Trash and Litter.

The County continues to operate a number of countywide trash reduction, litter reduction and recycling programs. The purposes of such programs is to raise awareness for the adverse impact of litter on the environment, encourage environmental stewardship through coordination of clean-up events and provide residents with services which encourages proper disposal of trash and recycling. Summaries of several programs and respective accomplishments are included in this reporting.

### *INVENTORY AND ANALYSIS OF EXISTING TRASH REDUCTION PROGRAMS*

Existing trash reduction programs in the Anacostia Watershed portion of the County were identified by the surveying municipalities, County agencies and the Anacostia Watershed Society and Alice Ferguson Foundation, non-profits involved in trash reduction and recycling services. The survey was conducted in 2013. Literature and internet research were also conducted to supplement the survey. Existing trash reduction programs were summarized in four categories: source control, which covers education and outreach, trash reduction partnerships and laws and regulations; cleanup programs; street sweeping; and structural best management practices (BMPs).

#### *SOURCE CONTROL PROGRAMS*

*Education and Outreach*

The County and municipalities have a variety of education and outreach programs aimed at schools and the general public to prevent litter at the source. These education programs range in depth from general environmental awareness to education events on litter control specifically. Several platforms exist in the County for information dissemination. New Carrollton, Keep Prince George's County Beautiful (KPGCB), and DoE indicate that social media is used to spread information. Informational topics include how to manage litter, benefits of recycling efforts, information about upcoming recycling and cleanup events and group meetings. Other outlets for information include printed flyers, brochures, promotions and newsletters. The Town of Landover Hills has run anti-littering advertisements on cable television.

*Storm Drain Stenciling*

The Storm Drain Stenciling Program continues to raise community awareness and alert community members of the connection between our storm drains and the Chesapeake Bay. While the County's SWM program requires stenciling on all new developments, this program focuses on stencils as a means of educating the citizens in older communities built prior to stormwater regulations. The County utilizes CBT funding to purchase the paint, tools, and stencils used by the volunteers to stencil the "Don't Dump – Chesapeake Bay Drainage" message. Table D7 provides a summary of the volunteer projects completed January 1 through June 30, 2014.

**TABLE D7**
**STORM DRAIN STENCILING SUMMARY (01/01/14-06/30/14)**

| Date | Group | Number of Volunteers | Number of Inlets Stenciled |
|---|---|---|---|
| April – May 2014 | Prince George's County Public Schools | 12 | 10 |
| April 24, 2014 | Cool Spring Elementary School | 25 | 20 |
| April 29, 2014 | City of Berwyn Heights | Public Works Crew | 231 |
| June 5, 2014 | Cora Rice Elementary School | 8 | 6 |
| | **TOTAL** | **45+** | **267** |

*Recycling Campaign*

Recycling campaigns spread information about recycling efforts, benefits of recycling and collection dates. The 2013 survey results show that Berwyn Heights, College Park, City of

Greenbelt, Maryland-National Capital Park and Planning Commission (M-NCPPC), AFF, KPGCB and DoE have established or help with recycling campaigns. These efforts include distribution information, via flyers or other media, on upcoming events and the benefits of recycling. Efforts also include hosting collection days, disseminating information and educating patrons. Some agencies or groups display information tables at these events.

For the reporting period from January 1, 2014 through June 30, 2014, DoE Recycling Section reports residential recycling tonnage at 19,320 tons and commercial recycling tonnage at 42,407 tons. Note that the commercial recycling tonnage is not inclusive of all commercial recycling with the County. It is reflective of what has been received at the MRF and it also includes recyclable from out of State and out of County.

*Education at Cleanup Events*

Many groups use cleanup events to not only eliminate litter but also educate about litter management and recycling. Municipalities and agencies that assist in educating the public at these events include M-NCPPC, AWS, DoE, KPGCB and College Park. At some cleanup events, a dumpster is provided for individuals to dispose of trash that would not be picked-up as a part of regular trash pick-up service, thus reducing their likelihood of illegal dumping and stockpiling litter.

*Unused Items at Cleanup Events*

College Park asks non-profits to attend collection events to facilitate the collection of potentially useful discarded items. This type of act helps to prevent litter from entering the trash stream. These events also target college students that may be purging items during times of transition.

*Organizational Meetings, Conferences, Workshops and Speakers*

The Anacostia Watershed Society (AWS) and AFF hold meetings, campaigns, conferences and workshops that focus on trash pollution and education. DoE Recycling Section and KPGCB also help by arranging speakers on litter management, recycling, and source control for events at which their attendance is requested.

*Service Learning*

Service learning events aim to engage teenagers in their community and educate them through participation. M-NCPPC host "Conservation Clubs" in which Park Rangers hold events and meetings to educate teenagers on the impact of litter in the County, trash reduction strategies and strategies for preventing litter build-up in the watershed. This event is largely educational. It allows teenagers to be inspired to help keep the County clean after learning the effects of litter and trash build-up. AFF helps to support Students in Action, which holds trash cleanup events and lessons in basic conservation, such as re-using plastic water bottles.

*Tours of Facilities*

Public education opportunities also include publications issued to residents and tours of County facilities including the Brown Station Road Landfill and Materials Recycling Facility. The intent of the tours and publications is to provide information about proper solid waste disposal, how and where the County's municipal solid waste is disposed, and the availability of

services and convenience centers for disposal of items that might otherwise be illegally dumped. A list of tours to the recycling facility is provided in Table D8.

**TABLE D8**
**MATERIALS RECYCLING FACILITY TOURS**
**(JANUARY 01, 2014 – JUNE 30, 2014)**

| Name of Participant | Tour Date |
|---|---|
| Prince George's County Employees | January 2014 |
| Prince George's County Employees | February 2014 |
| County Haulers: CWI, Bates, Goode | March 2014 |
| County Officials Tour | April 2014 |
| Editor Baltimore Childs Magazine Tour | April 2014 |
| Cornerstone Christian Academy Tour | April 2014 |
| Department of Interior Employees Tour | April 2014 |
| University of Maryland Staff Tour | May 2014 |
| Mid Atlantic Compost Group Tour | May 2014 |
| Prince George's County Teachers | June 2014 |

*TRASH REDUCTION PARTNERSHIPS*

Multiple partnerships have been developed over the years that improve the health of the Anacostia River. Notable partnerships include the Anacostia Watershed Restoration Partnership (AWRP), the *Alice Ferguson Foundation (AFF)* Trash Free Potomac Watershed Initiative and the *Keep Prince George's County Beautiful* (KPGCB). AWRP includes representative from Prince George's and Montgomery Counties and the District of Columbia (DC). The *Anacostia Restoration Plan,* a comprehensive watershed restoration plan, was developed by AWRP and identifies projects specifically related to trash reduction in the County. KPGCB is a partnership between DoE's Recycling Section and Citizens Concerned for a Cleaner County. The organization provides public outreach program support, including disseminating information through social media, participation in County cleanup events and speakers at community events.

The AFF has developed a regional litter campaign and established public outreach programs through the Trash Free Potomac Watershed Initiative, Trash Free Schools and Students in Action. AFF's programs aim to reduce trash through education and outreach at the community and school levels. At the time that EA Engineering, Science and Technology, Inc. conducted the survey of trash programs, AFF programs within the Anacostia River Watershed included the community-based Trash Free Capitol Heights program and school-based Trash Free Walker Mill Middle School and Cesar Chavez Elementary School programs. Trash Free Capitol Heights arranges presentations on litter reduction, displays banners which discourage littering and conducts community cleanup events. Also, the Trash Free Schools program arranges for presentations, display of banners and clean up events. Presentations are given on topics like techniques for writing persuasive letters to elected officials, the Regional Litter Prevention Campaign, and AFF's trash network and volunteer service hours.

The Trash Free Potomac Watershed Initiative is a partnership between AFF, DC and Maryland jurisdictions. This initiative focuses on regulation, policy, enforcement, public education and other solutions to the issue of litter. Many of their outreach activities include areas in Maryland. For a case study on trash reduction programs in the DC, research was

conducted on littering attitudes. Using research results, a regional campaign was formed and litter prevention toolkit was developed.

*LAWS AND ORDINANCES*

Jurisdictions responding to the 2013 survey, which was conducted by EA Engineering, Inc., indicate that town or city codes are enforced to combat littering and illegal dumping. Signage is also common at illegal dumping sites. M-NCPPC uses cameras at common dumping sites in parks for enforcement and prevention purposes.

To prevent illegal dumping, the County has tried to increase regional disposal areas to provide convenient sites for trash disposal. Public containers are available at the Brown Station Sanitary Landfill in Upper Marlboro and the Missouri Avenue convenience center located in Cheltenham. Both of these facilities are heavily used. The County allows residents using personal vehicles to dispose of trash for free at the landfill in an effort to reduce illegal dumping.

Complaints about illegal dumping are received from citizens, County police officers, Health Department Inspectors and Refuse Collection inspectors. The Strategic Multi-Agency Response Team, which is supported by the County, was formed to coordinate efforts to resolve illegal dumping and littering issues.

The Anti-Litter and Weed Ordinance is enforced by the County's Department of Permitting, Inspection and Enforcement (DPIE) and prohibits the accumulation of trash and debris on private property outside of the incorporated municipalities within the County. Violations of the ordinance are issued to the property owner. In the event that a property owner fails to address an ordinance violation, the County will have the property cleaned up at the owner's expense.

Maryland laws are used to prevent littering and dumping in the County. Maryland State Law CR 10-110 aims to prohibit the improper disposal of litter on public or private property and curb the desecration of the beauty of the State of Maryland. This law states that a person may not dispose of litter on a highway or public or private land unless the State specifies that it would be acceptable to do so. The penalty associated with this law is a misdemeanor and on conviction, a person may be subject to imprisonment and fines. The duration of imprisonment and amount of fines are based on the weight and volume of an illegal dumping. A court may also require the violator to remove or render the litter disposed of, repair and restore damaged property, perform public service relating to litter removal, suspend a license for up to 7 days for the type of conveyance used in the violation, or reimburse the State, County or municipality for the cost of removing the violation.

The Maryland Motor Vehicle Law 21-111 is enforceable in the County. This law states that it is illegal to place, drop or dispose of an injurious substance on the roadway. It is also illegal to throw, discharge or place refuse onto a roadway from a vehicle. If violated, a citation issued that can result in fines and points on a driver's license.

Legislation pertaining to a pilot food scrap composting project and another piece of legislation pertaining to multi-family recycling went into effect in 2014. Council Bill CB-87-2012 became effective January 1, 2014 and mandated that DoE implement a pilot food scrap composting project. During the reporting period of January 1, 2014 through June 30, 2014, tons of food scraps were composted. Also, statewide mandatory multi-family recycling went into effect 2014. The DoE Recycling Section is working with the multi-family properties to bring

these properties into compliance. It is anticipated that the enactment of the above described legislation, will complement efforts to reduce trash volumes and litter in our communities.

*Litter Enforcement Month* occurs each April in the Potomac Watershed; the Anacostia Watershed is a sub-basin of the Potomac Watershed. AFF coordinates the program to bring additional attention to littering and dumping. Role-call announcements are sent to police officers as a reminder of how to enforce litter, illegal dumping and related codes. Officers are encouraged to increase enforcement codes during the month of April. Throughout the month, public education about litter enforcement is encouraged with information posted on the police department website, blog, Facebook and Twitter accounts.

*CLEANUP PROGRAMS*

Municipalities, agencies and community groups participate in community cleanup events. Several cleanup events coincide with Earth Day with municipalities and groups hosting events individually or through partnerships. Many of the community events are the joint-efforts of larger organizations. Major cleanup event programs include the *Clean Up, Green Up* semi-annual events, Comprehensive Community Cleanup Program and Earth Day cleanup events.

Budgets for the cleanup events vary greatly from nothing, having volunteers bring their own bags and gloves, to the larger *Clean Up, Green Up* events which have been indicated to cost $5,000 in planning. The budgets for some of the smaller community events range from $100 to $250 while large events, which require more supplies and planning, could have budgets in excess of $1,000. In general, events with larger budgets result in more trash removal.

The Volunteer Neighborhood Cleanup Program, facilitated by DoE, assists communities in cleanup efforts to control litter. Active participation in the cleanup of a local neighborhood, park, road, street, or pond removes potential stormwater pollutants and builds community pride. Many participating groups further enhance and beautify their areas by planting trees, sowing seeds, weeding, watering, and mowing grass. A list of community participation projects and an estimate of the tonnage of trash collected is provided in the Table D9.

**TABLE D9**
**2014 VOLUNTEER NEIGHBORHOOD CLEANUPS (01/01/14 – 06/30/14)**

| Project Date | Volunteer Group | Tons of Trash |
|---|---|---|
| 01/08/14 | Town of Capitol Heights | 8.0 |
| 04/05/14 | AFF Potomac River Cleanup | 3.5 |
| 04/05/14 | Anacostia Watershed Society: Earth Day Cleanup | 4.8 |
| 04/05/14 | Lower Beaver Dam Civic Association: AWS Earth Day | 7.6 |
| | **TOTAL** | **23.9** |

The Comprehensive Community Cleanup Program is designed to revitalize, enhance, and help maintain unincorporated areas of the County and involves 21 concentrated cleanups each year. Through this program, DoE, DPIE and DPW&T work with local civic and homeowner associations to provide a wide range of cleanup and maintenance services over a two-week period. Services provided by this program include bulky trash collection, the tagging and removal of abandoned vehicles, Housing Code/Zoning Ordinance violation surveys, storm drain outfall screening/sampling, roadside litter pick-up, tree trimming, and storm drain maintenance.

A list of comprehensive community cleanup achievements during the reporting period is provided in Table D10. Although the focus of the program is aesthetic improvement of communities, the County services provided also benefit water quality by removing potential stormwater pollutants including the proper disposal of trash and debris from private property through a scheduled bulky trash pickup, the elimination of heavy metals and toxic substances by towing abandoned vehicles and removing potential pollutants from being discharged into waterways through inlet cleaning. There are 90 active cleanups in the rotation, so a community is scheduled for comprehensive cleanup approximately every 4-years. Over 100 tons of bulky trash/litter are removed from communities on a yearly basis through this program.

**TABLE D10**
**COMPREHENSIVE COMMUNITY CLEANUP ACHIEVEMENTS (01/01/14 - 06/30/14)**

| Community | Zoning Housing Code Enforcement | | Bulky Trash | | Vehicle Audit | |
|---|---|---|---|---|---|---|
| | Housing Code Violations Issued (No.) | Zoning Code Violations Issued (No.) | Tires Collected (No.) | Trash Collected (Tonnage) | Violations Issues (No.) | Vehicles Towed (No.) |
| Beltsville (Phase 1) | 18 | 0 | - | - | 4 | 1 |
| Beltsville (Phase 2) | 18 | 0 | 0 | 3.05 | 11 | 5 |
| Beltsville (Phase 3) | 23 | 18 | 0 | 2.66 | 15 | 6 |
| Beltsville (Phase 4) | 23 | 11 | - | - | 0 | 0 |
| Willow Wood Estates | 14 | 0 | 6 | 7.24 | 3 | 0 |
| Camp Springs (Phase 1) | 56 | 0 | 7 | 7.24 | 9 | 2 |
| Camp Springs (Phase 2) | 21 | 0 | 6 | 4.38 | 9 | 3 |
| Camp Springs (Phase 3) | 43 | 0 | 6 | 3.16 | 3 | 1 |
| Chillum-Ray | 12 | 0 | 5 | 5.44 | 32 | 14 |
| Eastpines | 81 | 0 | 6 | 9.53 | 8 | 1 |
| Marlboro Meadows (Phase 1) | 66 | 0 | 0 | 3.66 | 7 | 2 |
| Marlboro Meadows (Phase 2) | 24 | 0 | 2 | 4.53 | 2 | 1 |
| Lewisdale (Phase 1) | 81 | 0 | 1 | 4.16 | 15 | 6 |
| Lewisdale (Phase 2) | 3 | 7 | 0 | 4.38 | 25 | 13 |
| Lewisdale (Phase 3) | 27 | 0 | - | - | 9 | 4 |
| Springdale | 13 | 2 | 8 | 6.54 | 20 | 8 |
| **TOTAL** | **523** | **38** | **47** | **65.97** | **172** | **67** |

*Clean Up, Green Up* is sponsored by the County's Department of Public Works and Transportation (DPW&T), Office of Highway Maintenance. Groups across the County are encourage to sign up and bring volunteers to clean up the County on chosen dates in the Spring and Fall. The volunteers are provided with supplies of trash bags and gloves and sent to locations throughout the County to pick up trash. The event has been successful in cleaning several areas in a relatively short amount of time.

In the month of April, and specifically on Earth Day, multiple groups hold cleanup events. AFF, AWS an M-NCPPC all reported locations and value of Earth Day cleanups in the

2013 survey. AFF compiles the date from all these efforts, and their estimate for the Anacostia watershed cleanups in April 2013 in the County was 100,550 lbs.

*Roadside Cleanups*

Multiple programs exist for trash cleanup of roadside areas. In addition to street sweeping, roadway cleanup is conducted by DPW&T employees, volunteers, inmates and the State Highway Administration (SHA). Roadway collection programs described by the DoE's Recycling Section include:

- Roadside cleanup on landfill approach roads that result in approximately 10 tons of waste collected annually.
- Removal of litter from the County roadsides by DPW&T employees.
- Adopt-a-Road and Adopt-a-Median programs that are coordinated by DPW&T with local organizations doing the cleanup twice per year using DPW&T supplies.
- Removal of liter from non-roadside County property by DPW&T employees.
- A daily inmate program that involves five to seven inmates from the County Correctional Center and persons ordered by the court to conduct community service collecting litter on weekdays (supervised by DPW&T).
- A SHA roadside cleanup program which allows for a regular monthly cycle for interstate and primary roads and a 6-week cycle for secondary roadways. In addition, tow roving dump trucks are provided to remove large items and accident debris from interstate/primary roads. This program includes inmate crews, contractors and temporary employees.

In addition, the County is responsible for some non-roadside cleanups of trash, debris (including debris resulting from evictions) and abandoned items from properties and right-of-ways other than roadsides. Overall, DoE provided a total value of 6,000 tons annually of trash cleaned-up from these countywide roadside events as well as community events.

*STREET SWEEPING*

The type and frequency of street sweeping varies across the Anacostia watershed communities based on varying sizes and needs of these communities. Four of the municipalities (i.e. New Carrollton, Greenbelt, College Park and Berwyn Heights) have joined together to purchase a large sweeper and have an 8-week rotation of the sweeper among them. Manual sweeping is utilized for other municipalities, as frequently as necessary. The frequency of street sweeping in different jurisdiction and their methods is provided in Table D11. DPW&T uses a street sweeper on arterial, collector and industrial roadways in the County approximately eight times per year. Approximately 330 miles of roads are swept in the Anacostia watershed through the DPW&T program. Approximately 36-percent of the sweeping occurs in commercial areas and 34-percent occurs in residential areas. DPW&T maintains data in a spreadsheet with the name of the road, the "from" and "to" designations to identify the portion of the road that was swept, curb miles and dates of separate sweeping cycles from Spring through Fall.

| TABLE D11<br>STREET SWEEPING INFORMATION AND FREQUENCY (BASED ON SURVEYS) | | | |
|---|---|---|---|
| **Jurisdiction** | **Method** | **Frequency** | **Notes** |
| New Carrollton | Sweeper | 6 times/year | Shared with City of Greenbelt, College Park, and Berwyn Heights. Swept for 2 weeks every 8 weeks. |
| University Park | None | N/A | -- |
| Cottage City | Manual | When necessary | -- |
| Riverdale Park | Unspecified | 3 times/week | -- |
| Fairmount Heights | Manually | 1 time/week | -- |
| Berwyn Heights | Sweeper | 6 times/year | Shared with City of New Carrollton, College Park, and Greenbelt. Swept for 2 weeks every 8 weeks. |
| North Brentwood | Manually | 1 time/month | -- |
| College Park | Sweeper | 6 times/year plus 5 times/week in downtown | Shared with City of New Carrollton, Greenbelt, and Berwyn Heights. Swept for 2 weeks every 8 weeks. |
| Colmar Manor | Manually | Unknown | -- |
| Mount Rainier | Manually | When necessary | -- |
| Greenbelt | Sweeper | 6 times/year | Shared with City of New Carrollton, College Park, and Berwyn Heights. Swept for 2 weeks every 8 weeks. |
| Prince Georges County DPW&T | Sweeper | 8 times/year | Arterial, collector, and industrial roadways throughout county |

*STRUCTURAL BEST MANAGEMENT PRACTICES (BMP)*

The County has the option to add BMP's as a strategy for trash trapping and removal primarily on existing BMP ponds. Other types of structural BMPs can be used for trash removal from the MS4 and waterways. Start-of-pipe BMPs are those that are typically implemented at the storm drain inlet to prevent trash from entering the piped MS4. In-pipe BMPs include those that collect trash from the in-pipe (MS4) flow stream. End-of-pipe BMPs are within streams or rivers and consist of trash nets, fences, and other traps. Finally, water quality BMPs are stormwater management practices not designed specifically to trap trash, but often collect trash because they serve as spots where water flow slows down and debris can settle.

The County has three mechanical in-pipe trash screens located at pumping stations (MDE 2009) within the Anacostia Watershed. Together, on an annual average, these traps collect around 338 tons (676,000 lbs.) of floatables (Table D12). This value likely includes a significant amount of organic debris in addition to trash.

| TABLE D12<br>PUMPING STATION TRASH BMPS | | | | |
|---|---|---|---|---|
| **BMP Name** | **BMP Type** | **Location** | **Materials Collected (tons/yr)** | **Materials Collected (lbs/yr)** |
| Edmonston Pumping Station | Mechanical Trash Screen | Hyattsville | 338[a] | 676,000[a] |
| Colmar Manor Pumping Station | Mechanical Trash Screen | Colmar Manor | | |
| Brentwood Pumping Station | Mechanical Trash Screen | Brentwood | | |

[a] *Represents floatables (trash and organic debris) captured by three trash screens combined.*

The trash removal potential of a stormwater BMP depends on the BMP type and its maintenance. When trash enters a detention structure, wetland, or bioretention pond it, in theory, can become stuck in the trash Racks located in the riser structures of the pond. For example a pond near a trash hotspot would need to be cleaned more regularly than one in a suburban small neighborhood.

The County's Green Streets and Green Highways Program focuses on low-impact development (LID) techniques to treat stormwater pollutants generated by vehicle traffic (USACE 2010a). Some projects incorporated trash management measures. For example, the Sligo Creek/Takoma Branch Green Street project, completed in 2007, included implementation of a trash rack system at a road culvert in addition to bioretention/LID techniques implemented in street medians.

### *EVALUATION AND EFFECTIVENESS OF EXISTING PROGRAMS*

The largest reductions appear to be the result of roadway cleanups (e.g. inmate, DPW&T, SHA programs), community cleanups and pumping station screens. This is not surprising because these programs are performed on a relatively large scale. The roadway and community cleanups also include many bulky, heavy items; increasing the tonnage of trash removed by these programs significantly. Education programs and trash BMPs remove much less trash, but are also smaller-scale and less expensive programs. These programs along with outreach programs are also required by the MS-e permit. Street sweeping removes a small amount of trash considering its large scale and substantial costs.

#### *SOURCE CONTROL REDUCTIONS*

Table D13 summarizes trash reduction programs. Of the total existing trash reduction estimates, programs that were instituted after the TMDL determination could count as part of the credit to meet the MS4 permit and ultimately the trash TMDL since they implemented after the monitoring for the Anacostia Watershed TMDL (2009/2010).

**TABLE D13**
**TRASH REDUCTION PROGRAM SUMMARY**

| Category | Programs/BMP | Existing Trash Reduction Estimate Location (lb/year) | New Post-TMDL Reduction Estimate (lb/year) |
|---|---|---|---|
| Source Control | Programs at 3 Schools | 2,400 | 1,500 |
| Trash Cleanup | Streams and Communities | 301,553 | Up to 140,475 |
| | Roads | 1,828,000 | -- |
| Street Sweeping | County and Municipalities | 7,300 | -- |
| Structural BMPs | Trash Nets and Traps | -- | -- |
| | Pumping Stations | 33,800 | -- |
| | **Total** | 2,173,053 | Less than or equal ~142,000[a] |

[a] *This value could be compared to the 170,628 lb/yr removal criteria needed to comply with the MS4 permit.*

An estimate of the trash reduction was computed for the existing school programs as well as the other County source control programs. The spatial extent and impact of other outreach programs are harder to quantify but a similar approach for estimating the trash reduction for existing school programs could be used for any proposed new program in a specific area or across the entirety of the County.

For trash reduction from education programs, the approach published in the Montgomery County TMDL Implementation Plan was used. This approach assumes that education programs are 12-percent effective at reducing trash in a school district. This percentage was computed by assuming "half of the residential land is influenced by school age kids, the effectiveness of messaging is 40% and the willingness to participate is 60%."

Percent Effectiveness = 50% x 40% x 60% = 12%

Trash load reductions were computed for three schools, having existing trash reduction education programs, based on the school boundary area, fraction of each boundary within the three different residential land uses and the TMDL loading rates for residential land for the County (Table D14). Programs at Walker Mill Middle School and Cesar Chavez Elementary School have been implemented since the TMDL was put into place and hence will count toward the post-TMDL trash reductions. An estimated 2,350 pounds of trash per year are removed from the Anacostia Watershed due to the programs.

**TABLE D14**
**TRASH REDUCTION ASSOCIATED WITH SCHOOL PROGRAMS**

| School | Approximate School Boundary (ac.) | Percent of School Boundary Area[a] | | | Program Efficiency | Trash Reduction per School Boundary area (lb/yr) |
|---|---|---|---|---|---|---|
| | | Low Density Residential | Medium Density Residential | High Density Residential | | |
| Hollywood ES (District 2) | 1,060 | 2% | 32% | 5% | 12% | 840 |
| Cesar Chavez ES (District 3) | 480 | 0% | 32% | 12% | 12% | 410[b] |
| Walker MS (District 6) | 1,749[c] | 4% | 20% | 17% | 12% | 1,100[b] |
| | | | | | **Total** | 2,350 |

[a] *Trash reduction computation based on land-used based loads from the final Total Maximum Daily Loads of trash for the Anacostia River Watershed, Montgomery and Prince George's Counties, Maryland and the District of Columbia Report (MDE and DDOE 2010).*
*Trash reduction per school boundary area = Efficiency x area x[(low density residential % x low density load) + (medium density residential % x medium density residential load) + (high density residential % x high density load)]*
*Example: 840 lb/yr = (12%) (1,060 ac) [(1.19 lb/ac/yr x 2%) + (19.26 lb/ac/yr x 32%) + (7.88/lb/ac/yr x 5%)]*

[b] *Programs started in 2013, so trash reduction can be counted for TMDL credit.*

[c] *Some of Walker Mill MS District falls outside of the Anacostia River watershed. Values in this table are only for the land within the Anacostia River watershed.*

### *CLEANUP PROGRAMS*

The number of pounds of trash collected was not compiled for all cleanup events, therefore, the amount of trash collected from cleanup programs in the Anacostia watershed is an estimate. An estimate was also used to determine what portion of the cleaned are was outside the Anacostia watershed in the County. Data may also be missing from the list of cleanup events. Some assumptions were necessary to complete the computations. No new programs were identified post-TMDL development in 2010. When data was provided for half of the year (e.g. the Comprehensive Community Cleanup data for DoE), the half-year trash quantities were doubled to get annual estimates. Each data set was identified as being countywide or specific to the Anacostia portion of the watershed. If the data was countywide, an Anacostia watershed estimate was approximated by multiplying the countywide value by the fraction of the County's acreage that is within the Anacostia watershed (17%):

[Value in County's Anacostia watershed] = [Value in Entire County] x [17%]

Estimates of the quantities of collected trash was not readily available for some cleanup events. Instead of leaving these events out of the estimate, a median value was computed for the small community events of 1,600-pounds per event.

In the Anacostia watershed portion of the County, there are approximately 300,000-pounds of trash collected through stream and community cleanups. An estimated total of 2,128,000-pounds of trash is cleaned up from roadways, streams, and neighborhoods by County, municipal, SHA, no-profit organization and community group programs annually. Many of the approximately 300,000-pounds currently removed from the watershed through current cleanups occur within the streams and rivers which, even if occurring prior to the 2010 TMDL baseline event, can be counted as "credit" toward the trash TMDL. These in-stream cleanup values were performed downstream of end-of-pipe monitoring report locations within the streams. Additionally, the Washington DC draft TMDL Implementation Plan accounts for trash removed by skimmer boats, even those occurring before 2010, which is similar to the in-stream cleanups. Trash cleanup programs within the Anacostia watershed are significant and are estimated to remove over 2,000,000 pounds of trash per year. Of that amount, up to approximately 140,000 pounds of trash could count toward meeting the trash TMDL as long as the same cleanups are continued or new cleanups are added to replace ones that do not continue.

*STREET SWEEPING*

The current effectiveness of street sweeping from the County and municipal programs was computed based on the estimated trash load on roadways, the acres of roads swept, the frequency of sweeping, and a method from the literature to determine effectiveness based on frequency of sweeping compared to rainfall events. Table D15 shows the trash reduction from current street sweeping practices in Anacostia watershed portion of the county.

The TMDL monitoring in Maryland did not include a separate estimate for trash load from roads; however, the District monitoring did include a land use labeled "Major Roads, Transport, Communication, Utilities" with a load of 31.12 lb/acre/yr (MDE and DDOE 2010). The trash load on roadways likely varies quite substantially, but because most of the roads that are swept are major roads and/or in commercial areas, this number should be representative, on average, to generate a load estimate.

To compute the efficiency of street sweeping in Prince George's County, the average frequency of significant storms (0.5 inches or greater) in the area was identified from the Community Collaborative Rain, Hail & Snow Network data at Takoma Park 2006 – 2013, accessed through NOAA's NCDC website (NOAA 2013). This assessment showed that the interval between 0.5-inch or greater storms was on average 11.5 days. The efficiency of sweeping is computed with the following equations, where $F_{sw}$ is the average number of days between street sweeping and $F_s$ is the average number of days between storms:

$$\text{Efficiency} = 1 - F_{sw}/2F_s \quad (\text{for } F_{sw} < F_s)$$

$$\text{Efficiency} = F_s /2\, F_{sw} \quad (\text{for } F_{sw} >= F_s)$$

The acres of roads swept, frequency of sweeping, trash load, and efficiency computation were used to compute current trash collection via street sweeping with the following formula:

Estimated Trash Reduction (lb/yr) = Area Swept (acres) x Trash load (lb/acre/yr) x Efficiency

**TABLE D15**
**TRASH REDUCTION FORM CURRENT STREET SWEEPING PRACTICES IN ANACOSTIA WATERSHED PORTION OF THE COUNTY**

| Jurisdiction | | Road Area (ac) | Annual Trash Load (lb/yr) | No. of Sweeps (yr) | Notes | $F^{sw}$ | $F^{sw}/F^{s}$ | Sweeping Efficiency | Trash Reduction Estimate (lb/yr) |
|---|---|---|---|---|---|---|---|---|---|
| Roads Swept by County (DPW&T) | | 366 | 11379 | 8 | -- | 46 | 4.0 | 0.13 | 1,479 |
| Municipalities | Berwyn Heights | 46.9 | 1459 | 6 | 6x per year | 61 | 5.3 | 0.09 | 131 |
| | Bladensburg | 65.1 | 2025 | -- | unknown | -- | -- | -- | -- |
| | Brentwood | 31.5 | 980 | -- | unknown | -- | -- | -- | -- |
| | Capitol Heights | 49.8 | 1548 | -- | unknown | -- | -- | -- | -- |
| | Cheverly | 89.2 | 2777 | -- | unknown | -- | -- | -- | -- |
| | College Park | 356.3 | 11088 | 6 | 6x per year (plus 5x per week downtown) | 61 | 5.3 | 0.09 | 1,048 |
| | Colmar Manor | 18.0 | 560 | -- | manual when needed | -- | -- | -- | -- |
| | Cottage City | 15.8 | 491 | -- | manual when needed | -- | -- | -- | -- |
| | Edmonston | 25.3 | 788 | -- | unknown | -- | -- | -- | -- |
| | Fairmount Heights | 20.7 | 645 | 52 | manual weekly | 7 | 0.6 | 0.69 | 445 |
| | Glenarden | 54.6 | 1701 | -- | unknown | -- | -- | -- | -- |
| | Greenbelt | 348.2 | 10837 | 6 | 6x per year | 61 | 5.3 | 0.09 | 975 |
| | Hyattsville | 176.4 | 5488 | -- | unknown | -- | -- | -- | -- |
| | Landover Hills | 36.5 | 1137 | -- | unknown | -- | -- | -- | -- |
| | Mount Rainier | 55.7 | 1733 | -- | manual when needed | -- | -- | -- | -- |
| | New Carrollton | 100.8 | 3137 | 6 | 6x per year | 61 | 5.3 | 0.09 | 282 |
| | North Brentwood | 9.2 | 287 | 12 | 12x per year (manual) | 30 | 2.6 | 0.19 | 54 |
| | Riverdale Park | 100.7 | 3134 | 156 | 3x per week | 2 | 0.20 | 0.90 | 2,820 |
| | Seat Pleasant | 53.9 | 1678 | -- | unknown | -- | -- | -- | -- |
| | University Park | 37.5 | 1168 | -- | none | -- | -- | -- | -- |
| | | | | | | | | **Total** | **7,184** |

*Note: This table assumes that the amount of trash/acre of road area is a constant 31lb/yr/acre.*

An estimated 7,200 lb/year of trash is collected from the street sweeping programs in the Anacostia Watershed portion of the County.

*Structural BMPs*

Mechanical screens are in place at three County pumping stations, removing 338 tons of floatables per year. Assuming the 95% of that material is organic (MDE 2009), an estimated 33,800 pounds (17 tons) of trash is captured each year at the three pumping stations.

*GAP ANALYSIS*

*Lessons Learned from Stakeholder Surveys*

Stakeholders provided insight on successful structural and non-structural approaches for trash reduction in their survey responses. Structurally, it is important to have more available trash and recycling collections, and to have more containers throughout communities. In-stream trash racks have been successful, and AWS recommends many smaller trash racks that have a smaller area of influence instead of larger trash traps, as these are more difficult, time consuming, and expensive to maintain. Another stakeholder has suggested that automatic cleaning equipment is a better use of man-hours, and that implementing a full-time street sweeper has been a big success.

Survey respondents also suggested that community pride is tied to the appearance and maintenance of a community. The cleaner a community, the lower the tolerance of its citizens for trash. It was suggested in some survey results that stricter enforcement of the current laws would successfully decrease the amount of trash seen. Multiple stakeholders also recommended replicating the DC Bag Fee in order to stop those in the community that believe that littering is acceptable and to decrease plastic seen in the waste stream.

Commonly noted by stakeholders, there are also barriers to these ideas. The two most common barriers are financial and social/behavioral issues. Some smaller cities and communities do not have the funding to implement the structural approaches. Also, behaviorally some people do not know that littering is bad, and it was noted that most environmentally conscious people are not the ones typically littering; it is the smaller percentage of people that are producing a large percentage of the trash. Finally, the other barrier noted is governmental permitting taking a long time. These permits are needed to install small trash racks and trash traps, and the time needed to get a permit can become a burden to those trying to reduce trash in the environment.

Taken together, the stakeholder suggestions point to the potential effectiveness of community-wide efforts. Public education, many small devices/containers for trash removal, and enforcement are all wide-reaching ideas. Because funding is a challenge, creative ideas are needed to implement these programs by taking advantage of existing resources. *Trash Hotspots*

Some survey respondents indicated current hotspots throughout the county within the watershed. The areas noted include:

- Springhill Lake Recreation Center (Greenbelt)
- Bus Stop across street from Springhill Lake Recreation Center (Greenbelt)
- Prince George's Plaza (University Park)
- Commercial area on Route 450 from Riverdale Road to Ardwick Ardmore Road (New Carrollton)

Both stream and windshield trash monitoring surveys have been conducted since 2011 by the Metropolitan Washington Council of Governments (MWCOG 2013). The stream monitoring is performed at the same locations as the original 2008 TMDL monitoring sites. A summary of the 2011-2013 stream trash counts for a 500 ft. reach at each monitoring site indicates that there are some locations with consistently more trash than others. These appear to be clustered in the southeast corner of the watershed and indicate an area where more trash reduction efforts could be effective. Through the 144 miles covered with the windshield surveys, dumping sites have been identified as well. More detailed analysis of these areas as well as areas indicated to be high in the windshield survey results could be used to better target neighborhoods and streams for trash reduction and activities.

The Anacostia Restoration Plan (ARP) Report (USACE et al. 2010a) is a watershed-wide restoration plan developed by the Anacostia Watershed Restoration Partnership addressing multiple types of pollution and habitat degradation in the watershed. The ARP is a 10-year plan including results from surveys conducted throughout the watershed and an analysis that ranks trash and other pollution-reduction projects based on possible effectiveness. In addition to projects addressing other pollutants, the ARP includes 126 trash reduction projects in Prince George's County. Each project is ranked based on the level of trash at the site and the project's contribution to the Anacostia Watershed Trash Reduction Strategy (MWCOG 2007). The main document (USACE et al. 2010a) contains a summary of the overall plan and approaches for implementation. Details on each proposed project, including photographs, are included in the sub-basin specific project inventories (USACE et al. 2010b) and GIS layers are available identifying the location and type of each project Of the 126 projects, 68 of them are described as including trash removal. Some of these suggested projects also include installation of signage, trash traps, or outreach. However, this list of 68 can be considered a fairly comprehensive hot-spot list and therefore, they were added to our hotspot map.

The EA study highlighted general areas for where existing programs can be improved and provides estimates of possible trash reductions if such improvements are made.

***OPPORTUNITIES FOR PROGRAM ENHANCEMENTS***

*Source Control*

*Education*

A clear opportunity for immediate enhancement would be to expand the participation in the AFF Trash Free Communities and Trash Free Schools Programs. With both of these programs, the County can make use of already-developed resources, plus work closely with AFF to utilize the tools they have already developed to help the County meet their in trash reduction goals throughout the watershed. The AFF Trash Free program includes a toolkit of existing resources that were developed based on social marketing research on attitudes towards littering in the Potomac River watershed (AFF 2012a). The toolkit contains three major categories of anti-litter education devices: 1) advertisements and visuals, 2) communication materials, and 3) community outreach materials. When a county, town, or community can combine all three of the above categories into one, they can "build awareness among residents, community leaders, local media, and local businesses" as well as "drive behavior changes among litterers" (AFF 2013b). Based on survey responses, AFF is eager to work with Prince George's County to use the toolkits they have developed.

Advertisements include billboards on major commuter roads, posters (ranging from the 8 ½" X 11"papers to large bus shelter sized ads), flyers to distribute, decals and bumper stickers, PSA scripts to be read on the radio, online ads to fit onto company and County websites, and a school flier to engage students. Communication pieces include talking points to help educators speak with confidence, E-Blasts (emails that can spread campaign messages), social media recommendations, media outreach types, template letters-to-the-editor, and sound-bites that can be utilized at public events to spread the news. Overall, according to AFF, it is important to have a campaign on many levels that include items that can relate to a broad cross-section of people. For example, having a Cleanest Block contest can attract competitive people, while delivering a speech at a public event can attract a broader variety of people that are in attendance. The Trash Free Schools program is an eight step program to help schools implement a litter-prevention and cleanup program.

If the school programs were implemented at every school in the watershed, using the calculation method described above in the analysis section, an estimated 5,690 lb/year of trash could be prevented (Table D16). This corresponds to 2% of the point source trash reduction required under the TMDL, but as the programs are implemented and more data is available on the success of these programs, a more accurate estimate can be computed. Furthermore, teaching children the consequences of littering will have a lasting impact on the community, more so than single clean-up events.

The Trash Free Communities Program is wider-spread and targets the entire community. It is estimated that if this program were implemented County-wide with a similar effectiveness, that another 33,500 lb/year of trash could be removed from point sources (another 10% of the point source TMDL requirement) plus because adults are likely the ones contributing to the nonpoint source load, 12% of the entire nonpoint source load could be reduced (43,800 lb/year).

**TABLE D16**
**TRASH REDUCTION POTENTIAL IF EDUCATION PROGRAMS WERE IMPLEMENTED AT SCHOOLS THROUGHOUT WATERSHED**

| Land Use | Land Area in Prince George's County (ac)[a] | Loading Rate (lb/ac/yr)[a] | Program Efficiency | Countywide Trash Reduction Potential (lbs/yr)[b] | Anacostia River Watershed Trash Reduction Potential (lbs/yr) |
|---|---|---|---|---|---|
| Low Density Residential | 967 | 1.19 | 12% | 138 | 24 |
| Medium Density Residential | 11,817 | 19.3 | 12% | 27,311 | 4,643 |
| High Density Residential | 6,367 | 7.9 | 12% | 6,020 | 1,024 |
| | | | | **Total** | **5,690** |

[a] *Values for Land Area and Loading Rate come from MDE and DDOE (2010) Anacostia Trash TMDL Final.*
[b] *Calculated as Land Area x Loading Rate x Program Efficiency = Reduction Potential.*
[c] *Anacostia Watershed is 17% of the Land Area of Prince George's County.*

*Signage*

A significant portion of the trash reduction needed for TMDL compliance is from the nonpoint load allocation. A total of 347,958 lb/yr plus a 17,398 margin of safety is needed, which together account for 52.5% of the total TMDL baseline. The nonpoint load allocation was computed with in-stream monitoring and quantifying the weight of trash that was too large to fit through the storm drain. This includes items such as cloth/clothing/ carpeting, oil containers and

filters, antifreeze bottles, tires, bricks, concrete, lumber, appliances, metal, shopping carts and sports equipment. Some of the trash reduction efforts such as street sweeping and BMPs will not capture this type of trash, so additional prevention measures are necessary.

In the ARP (USACE et al. 2010a), 55 different locations in Prince George's County are recommended as places that could benefit from "No Dumping" signage. These would be good locations to try to combat illegal dumping and reduce the nonpoint load significantly at a low cost. In an evaluation of the effectiveness of "No Dumping" signs, a task force in Central Texas found an approximate 70% reduction in dumping incidents after appropriate signs (i.e., metal, large, strategically placed) were installed (CAPCOG 2010). If we assumed an average 1,600 lb of trash at a dump site (based on the average amount of trash collected from single-site cleanup events in the stakeholder survey), installing 55 signs with 70% effectiveness may results in 61,600 lb of trash being prevented. This is 17% of the nonpoint source load.

A critical element of increased signage, however, is to ensure that dumping does not simply occur elsewhere. The County has made efforts to encourage legal disposal for residents with free resident disposal at the County landfills, residential bulky-material pickup, and residents can even dispose of one-truck full of construction and demolition material free of charge each year.

*Enforcement*

Increased enforcement of littering laws could have a major impact on the reduction of trash accumulation in waterways. AFF has promoted a "Litter Enforcement Month" in April for the last three years, and they documented the number of citations in Prince George's County in April 2013 (Section 1.1.3). Recommendations for expanding these efforts from AFF include: reaching out to district attorneys and judges about Litter Enforcement Month, finding opportunities to increase the value of litter laws in the court system, and advocating for legislation to improve enforcement of littering and illegal dumping (including items such as cigarette butts and construction materials) (AFF 2013c). Prince George's County could become actively involved in these goals which have the potential to stress the consequences of littering. Together with a public education campaign and increased signage at dumping sites, this approach could fill a gap in knowledge about what littering is, how it affects the community, and making individuals accountable for breaking laws. A committed campaign to educate the public about the consequences of littering could be quite effective for those who will not stop littering just for society's benefit. Several well-placed billboards that warn of the consequences of littering could make an impact. The effectiveness of this approach is unknown at this time, but would be expected to decrease both the point and non-point source loads significantly.

*Disposable Bag Law*

Plastic bags are a very common item in trash surveys. In the river, 85% of the trash is plastic bags, Styrofoam, snack wrappers, and bottles and cans. In regional streams, plastic bags are even more dominant (greater than45%) (AWS 2008). Plastic bag bans are frequently cited as a very effective, revenue-gaining approach to reducing trash (MWCOG 2009, AWS 2008). However, there is opposition to this type of legislation, and in both 2012 and 2013, a Disposable Bag Law to tax disposable bags at 5-cents-a-bag failed to be approved in Prince George's County.

*Bottle Bill*

Bottles make up another dominant form of trash in the Anacostia River with the Anacostia Trash Reduction Report (2008) stating that approximately 25% of surveyed trash in the Anacostia consisted of bottles. Many glass bottles end up broken, leaving fragments of glass in the stream bed, while bottles and cans have been found in the river and along the stream banks and caught up in bushes. Bottle refund bills have been recommended to reduce this type of trash (AWS 2008), but these are not in place anywhere in the Anacostia River watershed. A bottle refund bill failed in committee in the Maryland Senate in March 2013, but a plan to reintroduce it within the next few years has been added to the Greenhouse Gas Reduction Act Plan released by Governor O'Malley in July 2013 (MDE 2013). Support from Prince George's County could aid in the approval of this effort.

If a Bottle Bill were approved in Maryland, it could make a significant impact on trash reduction throughout the Chesapeake Bay region. Even if buyers do not take the bottles back, it has been shown in other states that have implemented similar bills that individuals who need money or groups such as Boy/Girl Scouts will comb the road sides and bushes to collect these redeemable bottles for the monetary benefit of the refund (AWS 2008).

*Trash Cleanup Programs*

Trash cleanup programs are very effective in the County at collecting a large amount of trash. The roadway cleanups by the County, SHA, and Department of Corrections contribute a very significant portion of the total trash credited as being collected through the trash cleanup programs.

All ARP projects are grouped into tiers and ranked to aid in the selection of projects when resources are limited. In addition, many recommended cleanup locations are combined with preventative trash-reduction recommendations including signage, trash grates, and street sweeping. Targeting more cleanups in the southern portion of the region (Watts Branch and Cabin Branch subbasins), as well as the northern subbasins (Little Paint Branch and Indian Creek) could be beneficial both by covering areas where cleanups are not currently clustered and by involving the surrounding communities in these efforts.

Watts Branch subbasin is 70% residential (combined densities), which is the land use type with the highest trash loads from the TMDL monitoring (MDE and DDOE 2010). In this subbasin, there are 28 locations recommended for trash cleanup, many of them also with recommended signage and/or trash grate additions. These are all within or near Capitol Heights. In spring of 2013, the Trash Free Capitol Heights program (Section 1.1.1) was initiated, providing a good mechanism to coordinate cleanups in these locations within that community.

The Cabin Branch subbasin (or the lower portion of Lower Beaverdam Creek) is also a highly developed and high density residential portion of the watershed. The recommended ARP trash removal projects are in Cheverly, Seat Pleasant, and Capitol Heights. These efforts could likely be teamed with those in the Watts Branch subbasin.

The Indian Creek and Little Paint Branch cleanup sites are all in the Beltsville area, with much more industrial or urban land. This could lead to more commercial partnerships to maintain these sites. There is also a mixture of residential and forested area within these subbasins.

The amount of trash collected from additional cleanups will vary greatly. The range for pounds of trash collected in identified single-location events is 25 lbs to 9,675 lbs. The average is 1,600 lb, and considering that these locations are already identified as trash-heavy, means that likely at least that amount could be collected. If trash was removed from 20 of these sites per year, the 32,000 lb collected would be an estimated 5% of the total TMDL requirement. Additional benefit and cost-savings would be gained if signs were put up at these same sites and more credit may be gained if the amount of trash removed is more accurately tracked for each cleanup.

*Street Sweeping*

The estimated trash collected with the current sweeping programs (7,300 lb/yr) is relatively low compared to some of the other trash reduction methods. Even if the DPW&T sweeping efforts were doubled in frequency, the computed additional trash reduction is only 1,400 lb/yr (0.4% of the point source load TMDL). These values are estimated based on an assumed roadway trash load and the efficiency curve. Due to the uncertainty of these computations, if street sweeping was to be selected as a desirable option, it would be beneficial to collect some actual data on how much actual trash is picked up per mile by street sweeping on County roads in order to better quantify the credit for the TMDL. However, other studies also suggest minimal trash reductions have been achieved with additional street sweeping. In a review of street sweeping studies that looked at large particle collection, researchers also found little correlation between the frequency of sweeping and the transport of gross pollutants into the stormwater system (Walker and Wong 1999).

Several locations within the County that would further benefit from street sweeping were identified in the ARP report for a total of 50 additional miles of roadway to be regularly swept. Despite the relative inefficiency of street sweeping documented in the previous paragraph, it may still be valuable to consider extending (or modifying) existing street sweeping routes that are near these recommended locations as part of a pilot study to better calibrate local results. If the amount of trash collected by the street sweepers at these new locations were to be accurately measured, there is a possibility that an increase in the total volume of trash removed by street sweeping efforts could be achieved using minimal additional effort.

*Structural BMPs*

The amount of trash collected with the trash nets or traps is relatively low compared to the amounts from other current trash reduction methods. The amount of trash collected in the screens at the pumping stations is much higher and represents a more significant reduction. This is likely due to the automated nature of the devices and the large amount of water flowing through the pumping stations. Although the cost could be quite high, installing these devices at other pumping stations could be just as effective in meeting a significant portion of the TMDL requirement, with an estimated 11,300 lb/yr reduced at one additional pumping station. This equates to 4-percent of the total point source load.

Incorporation of start-of-pipe trash removal BMPs with the County's Green Streets plans may be an effective approach as well. In Montgomery County, an approach is being tested in one watershed to incorporate modified inlet trays in LID roadside swales to collect trash (MCDEP 2013). The design involves cleaning frequencies of only once every 4 to 6 months, making them a low-maintenance approach. In Los Angeles, CA where a trash TMDL was implemented in 2007, incorporation of full capture devices in storm drains has been a major

approach undertaken to meet the requirements, and many such devices have been designed and approved for this purpose (CRWQCB 2012). In Prince George's County, the large number of existing storm drain inlets and BMPs currently in place could allow for a program of simple trash retrofits and maintenance plans to be implemented at these structures, which could result in a significant amount of additional trash reduction. Specific locations and types of retrofits or trash BMPs will be analyzed in the Implementation Plan.

*Program Enhancements Summary*

General opportunities for program enhancements were identified in the preceding sections based on the survey results and literature data. Two major local efforts, the AFF schools and communities programs and the Anacostia Restoration Plan (USACE et al. 2010a) were identified as potentially cost-effective resources to use to reduce duplication of efforts when developing and selecting new trash reduction projects. The general recommendations and estimates for potential trash reduction are summarized below. Source control efforts appear to have the most potential for relatively high load reductions, but their estimates are also the most uncertain. Well-targeted cleanups and many of the BMPs discussed above will be necessary as well. Collaboration with law enforcement and local communities to address the nonpoint source loads is going to be particularly important, based on the estimated percent reductions described below.

***TRASH AND LITTER OUTREACH AND EDUCATION***

Since there are a range of stakeholder groups to target for education, which requires a number of messages in multiple languages that are delivered in multiple formats a consultant is being hired to assist in developing the trash campaign. Phase 1 involves identifying and evaluating existing programs, potential partners, and funding sources; identifying and characterizing key target audiences based on demographics and environmental impairments to help shape effective messages related to trash reduction/anti-littering. This information is essential component of a comprehensive, dynamic strategy to implement outreach leading to behavior change.

In phase II, the consultant will develop an overall outreach strategy with specific issue-focused campaigns, as well as evaluation metrics and program implementation cost estimates. This will include campaign components (messages, activities, example materials, and delivery methods) resulting in a comprehensive dynamic implementation strategy that addresses mandates and results in measurable results. A staff and resource capacity analysis will be done to develop a long-term budget strategy to achieve goals based on priorities and regulatory adjustment (adaptive management) mandates (proactive not reactive).

Currently outreach and education has focused on Recycling and Community Clean-ups with special emphasis on the TNI areas. DoE's Waste Management and Sustainable Initiatives Divisions are the primary County agencies involved in these efforts. It is the intent to improve coordination over the next two years and launch new outreach campaigns targeting general public, youth and businesses based on work done by our consultant. The highest priority areas will be the Anacostia River Watershed, underserved communities with trash hot spots and TNI areas.

The Effectiveness of Existing Trash Reduction Programs and Practices in the Anacostia Watershed: Prince George's County, Maryland (Prepared for: Prince George's County

Department of Environmental Largo, Maryland 20774 Prepared by: EA Engineering, Science, and Technology, Inc. May 2014) provides a summary of existing outreach efforts and recommendations for the Anacostia River Watershed. This information will serve as a springboard for developing the County-wide campaign.

In addition, please find attached a document entitled "Anti-Littering Outreach and Stewardship Campaign." It provides the blueprint for the development of the Education and Outreach component of the Trash Reduction Strategy. The goal is to change individual behaviors and reduce the amount of trash that is improperly disposed by raising residents' awareness and concern about community trash issues. The programs will focus on addressing the problem at the source (human behavior). The plan's specific objectives are:

- Create awareness that littering can have significant impacts on your health and property values;
- Foster community pride in a litter-free environment to create social pressure against littering; and
- Influence litterers to change their behavior to dispose of litter properly

***TRASH AND LITTER ACCOUNTING PROCEDURES***

There are currently existing different tracking sources for recording county trash reduction achievements but more work is being done to merge and standardize the process for a better and more efficient way of reporting this important information. County agencies currently use excel spreadsheets and GIS to track litter reduction activities. A more formal tracking system will be developed to provide an interface between spreadsheets and GIS.

Litter reduction efforts will be tracked and monitored under the following categories: source control, cleanups, street sweeping and structural BMPs. Table D17 summarizes trash reduction program if implemented under these categories.

Some of the programs evaluated collect both point source trash conveyed through the MS4, and nonpoint source trash. A discount factor was applied to these programs to estimate the amount of trash that could be credited toward the MS4 permit requirement of reducing 170,628 lb/yr of floatables and debris conveyed through the MS4. This ratio of MS4 trash to total trash was computed as the ratio of the TMDL's MS4 WLA to total trash as follows:

$$\textit{Portion of Total Trash Attributed to MS4} = \frac{\textit{MS4 WLA}}{\textit{WLA + LA}} = \frac{\textit{170,628 + 113,578}}{\textit{662,013}} = 43\%$$

The EA Survey (2013) results indicate that there were approximately 65 reported trash cleanup events across the watershed. Of these 65 events, 26 were in stream cleanups within the banks of the stream and surrounding park land. Due to these cleanups occurring downstream of the end of pipe location (where the TMDL loading rates were determined) the pounds removed through these events can be counted toward meeting the MS4 permit and Trash TMDL.

| TABLE D17<br>TRASH REDUCTION PROGRAM SUMMARY | | | | |
|---|---|---|---|---|
| **Category** | **Programs/BMP** | **Estimated Point Source Load Reduction** | **Estimated Non-Point Source Load Reduction** | **Predicted Pounds Removed if Implemented (lb/year)** |
| Source Control | Education program in every school | 2% | 0% | 5,690 |
| | Signage at 55 dumping sites | 0% | 17% | 61,600 |
| | Increased litter law enforcement and billboards | Unknown | Unknown | Unknown |
| | Disposal bag fee | 16% | 0% | 50,300 |
| | Bottle refund | 22% | 0% | 69,400 |
| Trash Cleanup | Clean additional 20 sites | 10% | 0% | 32,000 |
| | Continue in-stream cleanup events | 40% | 0% | 140,475 |
| Street Sweeping | Double County efforts | 0.4% | 0% | 1,400 |
| | Evaluate recommended ARP locations | Unknown | Unknown | Unknown |
| | Collect empirical data to evaluate benefits of increased street sweeping | Unknown | Unknown | Unknown |
| Structural BMPs | Stormwater BMP retrofits | Unknown | Unknown | Unknown |
| | Additional trash screens at pumping stations | 4% | 0% | 11,300 |

*All values in table are the maximum predicted amount of trash that may be removed for the enhanced program. MDE approval has not been received and therefore values may need to be adjusted.*

It has been assumed that for each year, the same cleanups occur and remove a similar amount of trash. Form these 26 events, there were approximately 140,475 lb/yr of total trash removed from the system. Because the total trash removed consisted of both point source trash (floatables and debris) and nonpoint source trash, the 140,475 lb/yr was multiplied by the ratio of MS4 trash to total trash to obtain the MS4 portion of trash removed.

*MS4 Trash Removed = 140,475 lb/yr x 43% = 60,404 lb/yr*

Therefore, the total amount of trash that could be removed from the watershed through these cleanups is estimated at 60,404 lb/yr.

### *ANACOSTIA TMDL WORK PLAN*

Table D18 provides the trash reduction programs and cost associated with per pounds trash removed from each program implemented.

| TABLE D18<br>PROPOSED TMDL TRASH REDUCTION STRATEGY | | | | | |
|---|---|---|---|---|---|
| **Program** | **Program Cost (in dollars)** | **Pounds of Trash Removed Per Year** | **Ration of MS4 WLA to Total WLA + LA** | **MS4 WLA Pounds of Trash Removed Per Year** | **Cost per Pound of Trash Removed (in dollars)** |
| In-Stream Cleanups | 33,400 | 140,475 | 43% | 60,404 | 0.55 |
| Education Campaign In Schools | 25,400 | 17,850 | 100% | 17,850 | 1.42 |
| Training and Enforcement | 94,500 | 61,400 | 100% | 61,400 | 1.54 |
| Community Outreach Campaign | 56,000 | 30,680 | 100% | 30,680 | 1.83 |
| No Dumping Signage Installation | 52,710 | 61,600 | 43% | 26,488 | 1.99 |
| Virtual Outreach Campaign | 85,350 | 34,300 | 100% | 34,300 | 2.49 |
| Bus, Truck, & Billboard Signage | 172,550 | 69,000 | 100% | 69,000 | 2.50 |
| Storm Drain Stenciling | 6,250 | 1,900 | 100% | 1,900 | 3.29 |
| Street Sweeping | 191,680 | 21,400 | 100% | 21,400 | 8.96 |
| Flash CAM Camera Installation | 383,250 | 65,600 | 43% | 28,208 | 13.59 |
| Structural BMPs | 118,150 | 3,940 | 100% | 3,940 | 29.99 |
| **TOTAL** | **1,219,240** | **508,145** | | **355,570** | 3.43 |

### *ANACOSTIA TMDL WORK PLAN MONITORING: IMPLEMENTATION TIMELINE AND MILESTONES*

The MS4 permit dictates yearly planning goals must be produced in the work plan, with the ultimate goal being that in the 5th year after issuance of the permit (2019) the programs have been implemented and achieved an effective removal rate of 170,628 lbs. annually. To institute these programs, the following timeline outlines what should be accomplished each year and specific milestones that must be met.

**2014**

- Develop and evaluate the current trash reduction techniques within the County
- Develop work plan that estimates that 170,628 lbs. of trash will be removed annually
- Develop a plan to account for trash reductions and begin populating data base with baseline values and actual pounds reduced from programs throughout the year.
- Public participation process for work plan, including notification of work plan in newspaper and website, 30 day comment period, and response to public comments document.
- Continue all in-stream cleanups, and account for pounds removed from each cleanup event.
- Identify funding and sponsorship sources and begin to secure funding for all programs
- Develop and implement a public education and outreach strategy
- Produce annual progress report detailing and quantifying trash elimination efforts

**2015**

- Trash removal benchmark is 62,000 lbs. of trash for the year 2015
- Ensure that in-stream cleanups are accounting for 60,404 lbs. of trash removed and if not increase the number of cleanups
- Select which additional program(s) will be implemented during 2015/2016 and begin program development stages of those campaigns
- Produce and distribute baseline surveys for programs

- Create applicable anti-littering campaign (slogan, motto, logo, signs, etc.) to be used in selected programs
- Begin initial stages of education campaign to reduce litter at its source
- Update trash reduction database
- Produce annual progress report detailing trash elimination efforts

**2016**
- Implement selected programs and track progress of programs to determine effectiveness
- Update trash reduction database
- Produce annual progress report detailing trash elimination efforts

**2017**
- The trash reduction benchmark is 125,000 lbs. of trash for the year 2017
- Assess needs to meet reduction benchmark and institute appropriate programs to cover gap in existing programs
- Update trash reduction database
- Produce annual progress report detailing trash elimination efforts

**2018**
- Ensure that 170,628 lbs./yr. of trash is being removed from the watershed
- Ensure that programs are implemented in the watershed to not only pick up litter but to reduce litter at its source
- Update trash reduction database
- Produce annual progress report detailing trash elimination efforts

The MS4 dictates what must be completed in the first year and that benchmark trash removal values must be accomplished in Years 2 and 4. The two trash removal benchmarks that are 62,000 lbs. in Year 2 (i.e. 2015) and 125,000 lbs. in Year 4 (i.e. 2017). Based on analysis of litter reduction programs, 60,404 lb reduction can be achieved through in-stream cleanups. By implementing additional selected programs, it is estimated that the trash removal can be increased to 125,000 lb/yr by the end of 2017. Then, by instituting improved or additional programs, the entire 170,628 lbs. will be attainable by the end of Year 5. Records and yearly reports will be maintained throughout the process to ensure that program goals and the NPDES permit are being met.

***PUBLIC NOTIFICATION AND PARTICIPATION OF TRASH AND LITTER PLAN***

The Prince George's County Department of the Environment (DoE) held public meetings to provide an overview and receive comments on the County's draft local total maximum daily load (TMDL) restoration plans for trash. These public meeting were conducted in accordance with the County's Municipal Separate Storm Sewer System (MS4) Discharge Permit Number MD0068284. Notice of public meetings was published in local newspapers the week of November 23, 2014. Members of the public were invited to comment in writing. The schedule of the three public meetings is provided in Table D19. These meetings offered interested persons the opportunity to learn about litter reduction strategies and to provide comments. A copy of the draft implementation plan was made available on the County's website. The County will provide written responses to comments received from the public. Comments were accepted in

writing through December 27, 2014. Comments were accepted at the public meetings or by mailing to:

Implementation Plan for Anacostia River Watershed Trash TMDL
DoE, Engineering Services Section, Sustainable Initiatives Division
1801 McCormick Drive, Suite 500
Largo, MD 20774

Email to: Mr. Ross Farahifar at rfarahifar@co.pg.md.

**TABLE D19**
**ANACOSTIA TRASH TMDL PUBLIC MEETING SCHEDULE**

| Date | Location | Address | Time |
|---|---|---|---|
| 12/03/14 | Thomas Stone Elementary School | 4500 34th St., Mt. Rainier MD, 20712 | 6:30-8:00 pm |
| 12/10/14 | Capitol Heights Elementary School | 601 Suffolk Ave., Capitol Heights MD 20743 | 6:30-8:00 pm |
| 12/17/14 | DoE Office | 1801 McCormick Dr., Ste. 140, Largo, MD 20774 | 6:30-8:00 pm |

## 5. PROPERTY MANAGEMENT AND MAINTENANCE

### *STORMWATER POLLUTION PREVENTION PLAN*

Nine County facilities are currently covered by a General Discharge Permit for Stormwater Associated with Industrial Activities (General Permit). There are 4 managed by DoE, 4 managed by DPW&T, and 1 facility managed by the Office of Central Services (OCS). The status of each County facility is provided in Tables D20 through D28. In preparation of the new regulatory mandates of the 12-SW Industrial Permits, DoE reviewed all facility stormwater pollution prevention plans (SWPPPs) and initiated plan updates that will reflect bmp development needs or controls for storage/stockpile areas. The updated SWPPPs will also meet the 12-SW mandates.

In 2014, the County instituted a program to monitor County facility progress regarding Industrial Permit and SWPPP progress. Submission of monthly facility inspection reports must now be submitted to the SMD on a monthly basis. Additionally, the County secured the services of a call contact to assist with SWPPP development and implementation, specifically the consultant has been tasked with conducting facility deficiency analyses and providing assistance with inspection and proposed corrective action.

#### *DOE FACILITIES*

##### *ABANDONED VEHICLE IMPOUND LOT*

Staff at the Abandoned Vehicle Impound Lot demonstrate good pollution prevention knowledge and regularly conduct good housekeeping procedures, facility inspections, and staff training. Facility staff are currently responsible for BMP maintenance and an additional training will be conducted to support their BMP maintenance program through the inspection services of KCI.

| TABLE D20<br>ABANDON VEHICLE IMPOUND LOT – 2014 Status | | |
|---|---|---|
| **Permit Number** | **Permit Issuance Date** | **County Contact** |
| 025W0132 | 03-11-2003 | Mark Jenkins<br>Abandon Vehicle Section, DoE |
| **Immediate Needs** | | |
| SWPPP: Develop SWPPP to meet 12-SW Industrial Permit requirements. | | |
| **2014 Achievements** | | |
| Good Housekeeping and Pollution Prevention: Inspection and housekeeping records are well documented, including Police Department Auto Theft Lot.<br>Waste Management: Proper storage and removal of used trash.<br>Stormwater Management: SWMF preventative maintenance continues, including regular mowing and visual inspections of channels. Stabilized channel in D lot.<br>Staff Education & Training: Conducted facility-wide training. | | |
| **Long Term Planning** | | |
| Training: Expand facility training and inspections utilizing consultant staff. | | |

*BROWN STATION ROAD SANITARY LANDFILL*

The Landfill has accepted municipal waste since 1968. This year the Landfill continues to improve the controls at the material stockpile area and to increase monitoring and maintenance of the ponds receiving runoff from the active cells.

| TABLE D21<br>BROWN STATION ROAD SANITARY LANDFILL – 2014 Status | | |
|---|---|---|
| **Permit Number** | **Permit Issuance Date** | **County Contact** |
| 025W0401 | 04-07-2003 | Roger Merritt, Associate Director, WMD, DoE |
| **Immediate Needs** | | |
| SWPPP: Develop SWPPP to meet 12-SW Industrial Permit requirements.<br>Spill Prevention Control and Countermeasures (SPCC): Properly labeled spill kits. Include spill kit usage and location information in P2 training. Per SPCC Plan, provide containment around the gas pumps and heating oil tanks.<br>Good Housekeeping/Pollution Prevention: Develop a timeline and design for a functionally appropriate BMP for vehicle/equipment wash area. | | |
| **2014 Achievements** | | |
| Record Keeping: Initiated monthly inspection documentation to include all ponds. Conducted inspections for Missouri Avenue Convenience Center. Initiated a SWPPP for the Missouri Avenue Convenience Center.<br>Materials Management Plan: SMD hired KCI to perform quarterly inspections of ponds in material stockpile area in order to reduce sediment discharge while awaiting proper sediment and erosion control planning. | | |
| **Long Term Planning** | | |
| Training: Expand facility training and inspections utilizing consultant staff. | | |

*MATERIALS RECYCLING FACILITY*

The County's Materials Recycling Facility (MRF) is currently operated by Waste Management Inc. under their standards for environmental compliance. The facility uses Spanish and English language pollution prevention training materials.

| TABLE D22<br>MATERIALS RECYCLING FACILITY (DoE FACILITY) – 2014 Status | | |
|---|---|---|
| **Permit Number** | **Permit Issuance Date** | **County Contact** |
| 025W0132 | 03-11-2003 | Desmond Gladden, Contract Manager<br>Recycling Team, Waste Management Division, DoE |
| **Immediate Needs** | | |
| SWPPP: Update SWPPP to meet 12-SW Industrial Permit requirements. | | |
| **2014 Achievements** | | |
| Record Keeping: Good use of inspections.<br>Good Housekeeping: Maintains a clean, orderly facility. Began corrective action documentation in order to monitor progress in catch basin cleaning and debris removal. | | |
| **Long Term Planning** | | |
| Training: Expand facility training and inspections utilizing consultant staff. | | |

*SANDY HILL CREATIVE DISPOSAL PROJECT*

The Sandy Hill Landfill stopped accepting waste in 2000. The County continues to maintain the stormwater management facilities in compliance with the 2012 consent order. Monthly inspections of the facility are reviewed by the SMD. The facility is in the process of developing a SWPPP in compliance with the 12-SW Permit.

| TABLE D23<br>SANDY HILL CREATIVE DISPOSAL PROJECT (DoE FACILITY) – 2014 Status | | |
|---|---|---|
| **Permit Number** | **Permit Issuance Date** | **County Contact** |
| 025W0132 | 03-11-2003 | Paula Burr, Administrative Specialist<br>Project Management Section, WMD, DoE |
| **Immediate Needs** | | |
| Stormwater Pollution Prevention Plan: Update SWPPP to meet current facility practices and new Industrial Permit requirements. | | |
| **2014 Achievements** | | |
| 12-SW Compliance: Completed NOI.<br>Stormwater Management: On-going pond maintenance and stabilization for closed fill areas. | | |
| **Long Term Planning** | | |
| Training: Expand facility training and inspections utilizing consultant staff. | | |

## *OCS FACILITY*

### *PARK CENTRAL VEHICLE MAINTENANCE FACILITY*

| TABLE D24<br>PARK CENTRAL VEHICLE MAINTENANCE FACILITY (OCS Facility) – 2014 Status | | |
|---|---|---|
| **Permit Number** | **Permit Issuance Date** | **County Contact** |
| 025W0132 | 03-11-2003 | Richard Hilmer, Fleet Administrator<br>Facilities Operation and Management Division, OCS |
| **Immediate Needs** | | |
| Stormwater Management: Partner with County consultant KCI to ensure the proper maintenance and inspection of the off-site drainage area and SWMF. | | |
| **2014 Achievements** | | |
| SWPPP: Completed registration for 12-SW Industrial Permit (SWPPP and NOI).<br>Staff Education and Training: P2 training for all 30 staff members. Records kept on site.<br>Stormwater Management: Regular inspections and debris removal from stormwater management facility. Began quarterly visual monitoring of two outfalls, debris found in one.<br>Spill Prevention Control and Countermeasures: Good documentation of leaks. Continued use of rekrete for spill cleanup. Use of absorbent booms for inlet protection. | | |
| **Long Term Planning** | | |
| Training: Expand facility training and inspections utilizing consultant staff. | | |

## *DPW&T FACILITIES*

DPW&T continues to move forward in the development of SWPPP for three facilities. The new SWPPP's will focus on high risk areas which were previously identified in need of BMP improvements. The focus areas include: the vehicle and equipment washing area, material stockpiles and off site erosion. During the 2014 calendar year, DPW&T anticipates working closely with the consultant in achieving greater control and to meet new regulatory controls under the 12-SW mandates.

| TABLE D25<br>DPW&T FACILITY OVERVIEW | | | |
|---|---|---|---|
| **DPW&T Facility Name** | **Main Function(s)** | **Usage Duration** | **Activities** |
| Brandywine Facility | Material Storage/Services for North County | Year Round | Crew Dispatch for South County |
| Ritchie Service Complex | Snow Event Response<br>Materials Storage<br>Main Maintenance Depot | Year Round | Equipment Maintenance, Road Crew Dispatch, Materials Storage, OHM Headquarters |
| Glenn Dale Facility | Material Storage/Services for North County | Year Round | Crew Dispatch for North County |

*RITCHIE SERVICE COMPLEX*

| TABLE D26<br>RITCHIE SERVICE COMPLEX (DPW&T) – 2014 Status | | |
|---|---|---|
| **Permit Number** | **Permit Issuance Date** | **County Contact** |
| 025W0132 | 03-11-2003 | Gwendolyn Clerkley, Associate Director, OHMD, DPW&T<br>On-Site Compliance: Vernon Stinnett |
| **Immediate Needs** | | |
| SWPPP: Complete SWPPP development for 12-SW Permit. | | |
| **2014 Achievements** | | |
| Staff Education and Training: Training attendance records are maintained on-site.<br>Material Storage: Good use of tarps throughout the yard for material stockpile and equipment storage. Over the past snow season, tarp covered stockpiled salt has been eliminated by mixing with road salting operations.<br>Spill Prevention Control and Countermeasures: Spill kits installed.<br>Good Housekeeping: Plans for new wash bay to replace existing system continues.<br>Record Keeping: Monthly facility inspections performed. | | |
| **Long Term Planning** | | |
| Training: Expand facility training and inspections utilizing consultant staff. | | |

*BRANDYWINE FACILITY*

| TABLE D27<br>BRANDYWINE FACILITY (DPW&T) – 2014 Status | | |
|---|---|---|
| **Permit Number** | **Permit Issuance Date** | **County Contact** |
| 025W0132 | 03-11-2003 | Gwendolyn Clerkley, Associate Director, OHMD, DPW&T<br>On-Site Compliance: Jay Dixon |
| **Immediate Needs** | | |
| SWPPP: Complete SWPPP development for 12-SW Permit. | | |
| **2014 Achievements** | | |
| Good Housekeeping: Maintains a clean and facility and conducts regular housekeeping to reduce contamination from material stockpile area.<br>Spill Prevention Control and Countermeasures: Spill kits installed.<br>Record Keeping: Monthly facility inspections performed with follow-up actions as warranted.<br>Staff Education and Training: Training attendance records are maintained at Ritchie Service Facility.<br>Material Storage: Continued good use of inspection and housekeeping controls for P2 in the hazardous material area of vehicle maintenance shop. | | |
| **Long Term Planning** | | |
| Training: Expand facility training and inspections utilizing consultant staff. | | |

*GLENN DALE FACILITY*

| TABLE D28<br>GLENN DALE FACILITY (DPW&T) – 2014 Status | | |
|---|---|---|
| **Permit Number** | **Permit Issuance Date** | **County Contact** |
| 025W0132 | 03-11-2003 | Gwendolyn Clerkley, Associate Director, OHMD, DPW&T<br>On-Site Compliance: Clarence Waters |
| **Immediate Needs** | | |
| SWPPP: Complete SWPPP development for 12-SW Permit. | | |
| **2014 Achievements** | | |
| Staff Education and Training: Training attendance records are maintained at the Ritchie Service Facility.<br>Stormwater Management: Well documented maintenance and regular debris removal from pipe on Northern Avenue across from the shop.<br>Spill Prevention Control and Countermeasures: Spill kits installed.<br>Stormwater Pollution Prevention: Frequent inspections and debris removal around the outfalls are now routinely conducted to reduce the potential for site flooding and runoff contamination. | | |
| **Long Term Planning** | | |
| Training: Expand facility training and inspections utilizing consultant staff. | | |

*MUNICIPAL NPDES GENERAL INDUSTRIAL DISCHARGE PERMIT STATUS*

During the first half of the 2014 calendar year, the County continued to assist the nine identified municipal industrial facilities with SWPPP development for the 12-SW Industrial Permit. The achievements and long term planning status is presented in tables D29 through D37. The County hired KCI for deficiency analysis, and The Low Impact Development Center for inspection and BMP development assistance.

*TOWN OF CHEVERLY*

| TABLE D29<br>Town of Cheverly DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW2139 | Juan Lois Torres, Department of Public Works Director |
| **2014 Mid Term Achievements** | |
| • Submitted NOI for 12-SW coverage.<br>• Began SWPPP development for 12-SW. | |
| **Long Term Planning** | |
| • Financing for the design and construction of needed BMPs.<br>• Further training for staff. | |

### *CITY OF COLLEGE PARK*

| TABLE D30<br>City of College Park DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW2148 | Steve Halpern, City Engineer |
| **2014 Mid Term Achievements** | |
| • Submitted NOI for 12-SW coverage.<br>• Began SWPPP development for 12-SW. | |
| **Long Term Planning** | |
| • Develop BMPs for surface flow not captured by sanitary sewer. | |

### *CITY OF DISTRICT HEIGHTS*

| TABLE D31<br>City of District Heights DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW2141 | Angela Barnhill-Love, Administrative Assistant |
| **2014 Mid Term Achievements** | |
| • Submitted NOI for 12-SW coverage.<br>• Began SWPPP development for 12-SW. | |
| **Long Term Planning** | |
| • Develop BMPs for surface flow.<br>• Improve record keeping. | |

### *CITY OF GREENBELT*

| TABLE D32<br>City of Greenbelt DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW2145 | Luisa Robles, Recycling Coordinator |
| **2014 Mid Term Achievements** | |
| • Submitted NOI for 12-SW coverage.<br>• Began SWPPP development for 12-SW. | |
| **Long Term Planning** | |
| • Enhance perimeter swale and ensure all runoff is treated for P2. | |

### *CITY OF HYATTSVILLE*

| TABLE D33<br>City of Hyattsville DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW2150 | Leslie Riddle, Public Works Director |
| **2014 Mid Term Achievements** | |
| • Submitted NOI for 12-SW coverage.<br>• Began SWPPP development for 12-SW. | |
| **Long Term Planning** | |
| • Develop BMPs for perimeter controls.<br>• Develop BMPs for surface flow not captured by holding tank. | |

### *CITY OF LAUREL*

| TABLE D34<br>City of Laurel DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW1841 | Antonius Hallmark, Project Inspector |
| **2014 Mid Term Achievements** | |
| • Submitted NOI for 12-SW coverage.<br>• Began SWPPP development for 12-SW. | |
| **Long Term Planning** | |
| • Address restoration requirements of 12-SW. | |

### *CITY OF NEW CARROLLTON*

| TABLE D35<br>City of New Carrollton DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW2144 | Bernard Cochran, Public Works Director |
| **2014 Mid Term Achievements** | |
| • Submitted NOI for 12-SW coverage.<br>• Began SWPPP development for 12-SW. | |
| **Long Term Planning** | |
| • Address restoration requirements of 12-SW. | |

### *TOWN OF RIVERDALE PARK*

| TABLE D36<br>Town of Riverdale Park DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW2146 | Leonard Addison, Public Works Director |
| **2014 Mid Term Achievements** | |
| • Submitted NOI for 12-SW coverage.<br>• Began SWPPP development for 12-SW.<br>• Installed rain garden. | |
| **Long Term Planning** | |
| • Continue developing perimeter controls. | |

### *CITY OF SEAT PLEASANT*

| TABLE D37<br>City of Seat Pleasant DPW – 2014 Status | |
|---|---|
| **Permit Number** | **County Contact** |
| 02SW2141 | Johnny Thompson, Administrative Assistant |
| **2014 Achievements** | |
| • Good P2 knowledge.<br>• Staff training in July on P2 and SWPPP development.<br>• Awarded funding and installed rain garden to filter run off from equipment storage area. | |
| **Long Term Planning** | |
| • Improve perimeter controls.<br>• Reduce run on from adjacent properties. | |

### *STREET SWEEPING*

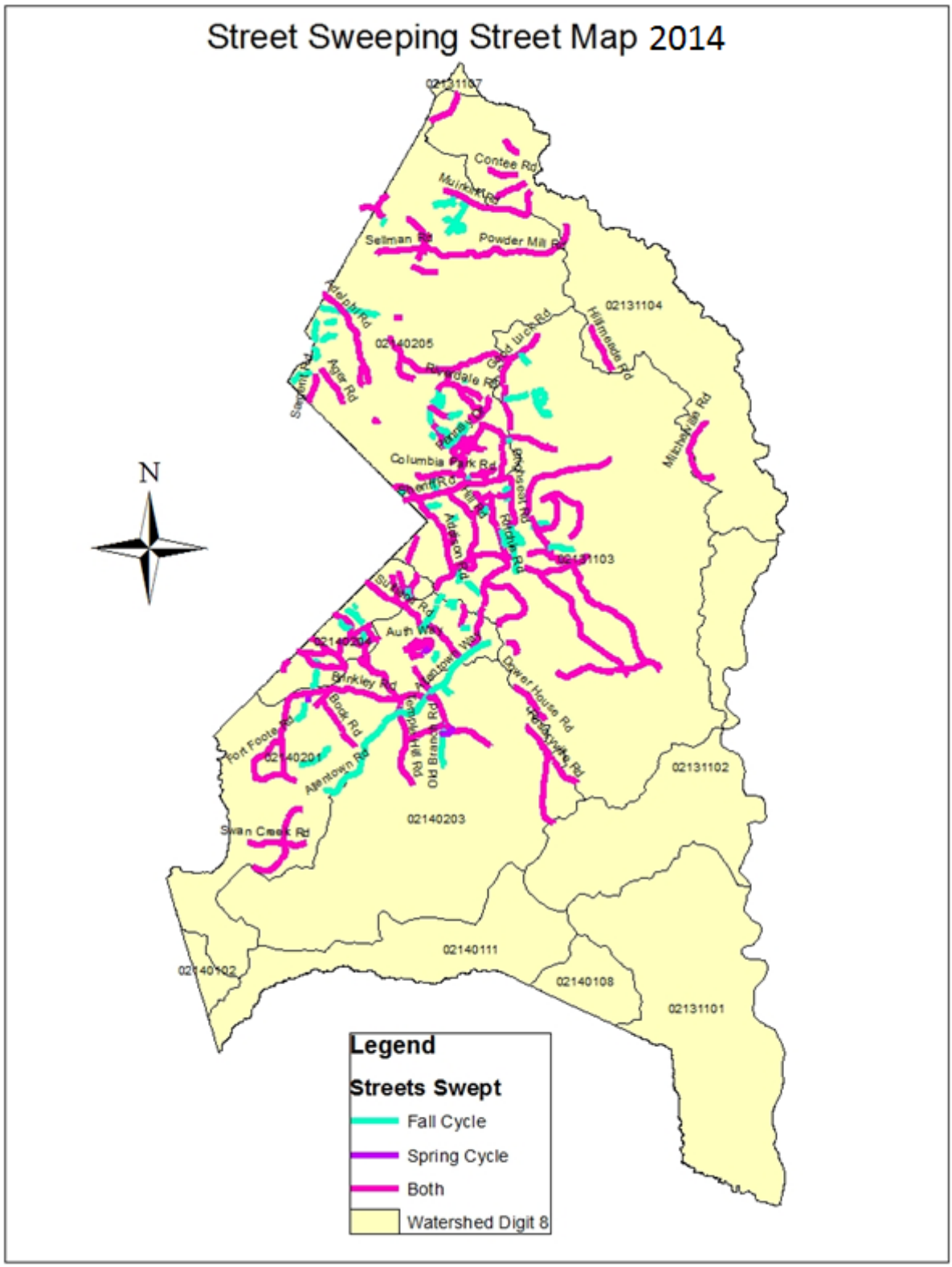
The County's street sweeping operations were limited to selected arterial, collector, and industrial streets, with service to residential subdivision streets provided on a request only basis. The street sweeping data collected for the arterial and industrial streets is recorded in two seasonal cycles, with 3 months of data recorded for each cycle. During the reporting period, 502.66 curb miles were swept. The street sweeping database for the 2014 reporting year is provided on DVD, Management Programs/Road Maintenance/Street Sweeping.

The OHMD is in the process of evaluating the street sweeping program to improve program tracking, capture water quality efficiencies and report programmatic achievement for alternative BMP watershed restoration credit reporting. As the first step in the analysis, the roads serviced during this reporting period have been mapped on an overlay of the 8-digit watersheds, as shown in Figure D3. This information will be used to improve water quality efficiencies and potentially shift roads swept to more sensitive watersheds. Programmatic improvements also under consideration include the following:

- Consider servicing less roads and increasing the frequency in order to achieve full level of credit. MDE requires roadways swept a minimum of 2 times per month for a full credit. Currently we are servicing roads about once a month.
- Shift services roads to sensitive watersheds and the Anacostia to help address the Trash total maximum daily load (TMDL).
- Add additional roads swept in sensitive watersheds.
- Using ARCGIS, link all cycle data to the map and attribute table. This will improve documentation for NPDES reporting and eliminate double entry in a separate excel spreadsheet.

Recognizing that the street sweeping program's mission was not originally for NPDES MS4 water quality credit, a further analysis of the costs involved and the benefit derived for targeting the program needs to be fully evaluated.

**FIGURE D3**
**ROADWAYS SERVED –COUNTYWIDE STREET SWEEPING PROGRAM**



### *STORM DRAIN MAINTENANCE: INLET, STORM DRAIN AND CHANNEL CLEANING*

Typically, every storm drainage inlet located within the 21 communities annually served by the CCCP is inspected and cleaned. Challenges during this reporting period, including the extreme number of snow and ice events which delayed the start of the construction season and a reduced capacity to utilize contractual services for system cleaning, prohibited the County from servicing the communities during this reporting period. Storm drain cleaning services were limited to 115 citizens' requests for services and the inspection and cleaning of the storm drain system in the Town of Upper Marlboro.

The SDMD is also responsible for major channel maintenance. There are 69 major channels which are inspected and cleaned/cleared on a three year cycle. During this reporting period, maintenance was performed on 200 linear feet of concrete channel and 11,054 linear feet of earthen channel.

### *UNPAVED SHOULDER MAINTENANCE*

The OHMD administers road maintenance programs to eliminate standing water, enhance green space, and reduce herbicide usage. Roadside vegetation is primarily maintained mechanically with herbicide use restricted to the spraying sidewalk joint and monolithic concrete median areas. Litter crews utilize small equipment to cut the grass around guardrails, and roadside shoulders are mowed in a six-week cycle during the growing season (March 15-October 15). Limited herbicide applications have reduced the potential for distillates and toxins to migrate into the aquatic ecosystem. The mowing schedule for the 2014 reporting year is provided on DVD, Management Programs/Road Maintenance/Rural Roadside Mowing.

### *LITTER CONTROL*

The County maintains an aggressive litter control and collection program along County maintained roadways. The litter service schedule is based on historical collection data, where the most highly littered roadways are serviced as often as 24 times per year. In general, major collector and arterial urban roadways are serviced weekly with rural roadsides served at least once per month. During the reporting period, the County received over 720 citizen requests for illegal dumping and litter removal through the County's 311 system. Illegal dumping in the right-of-way is removed within five working days of notification. As a result of these efforts, approximately 687.21 tons of debris and solid waste was removed from County roadways during this reporting period. A Litter Control Operations Report and Illegal Dumping Report are provided on DVD, Management Programs/Road Maintenance/Roadside Litter.

### *SNOW AND ICE CONTROL PROGRAM*

To determine when the application of de-icing materials is warranted, including pre-treatment applications, the Snow and Ice Removal Program depends heavily upon information from temperature probes, weather forecasts, Accuweather subscription service, and individuals monitoring the road conditions. Temperature probes embedded in the roadways gage pavement temperatures and provide key information used to determine an appropriate treatment for snow and ice control.

Salting and pretreatment application was utilized for 17 events with 44,502.25 tons of salt used at a cost of $2,476,249.64. Salt tonnage includes the 2014 winter snow season within the reporting period of January – June, 2014. In an effort to reduce the amount of salting necessary to ensure safety to the traveling public during adverse conditions, pretreatment was extensively

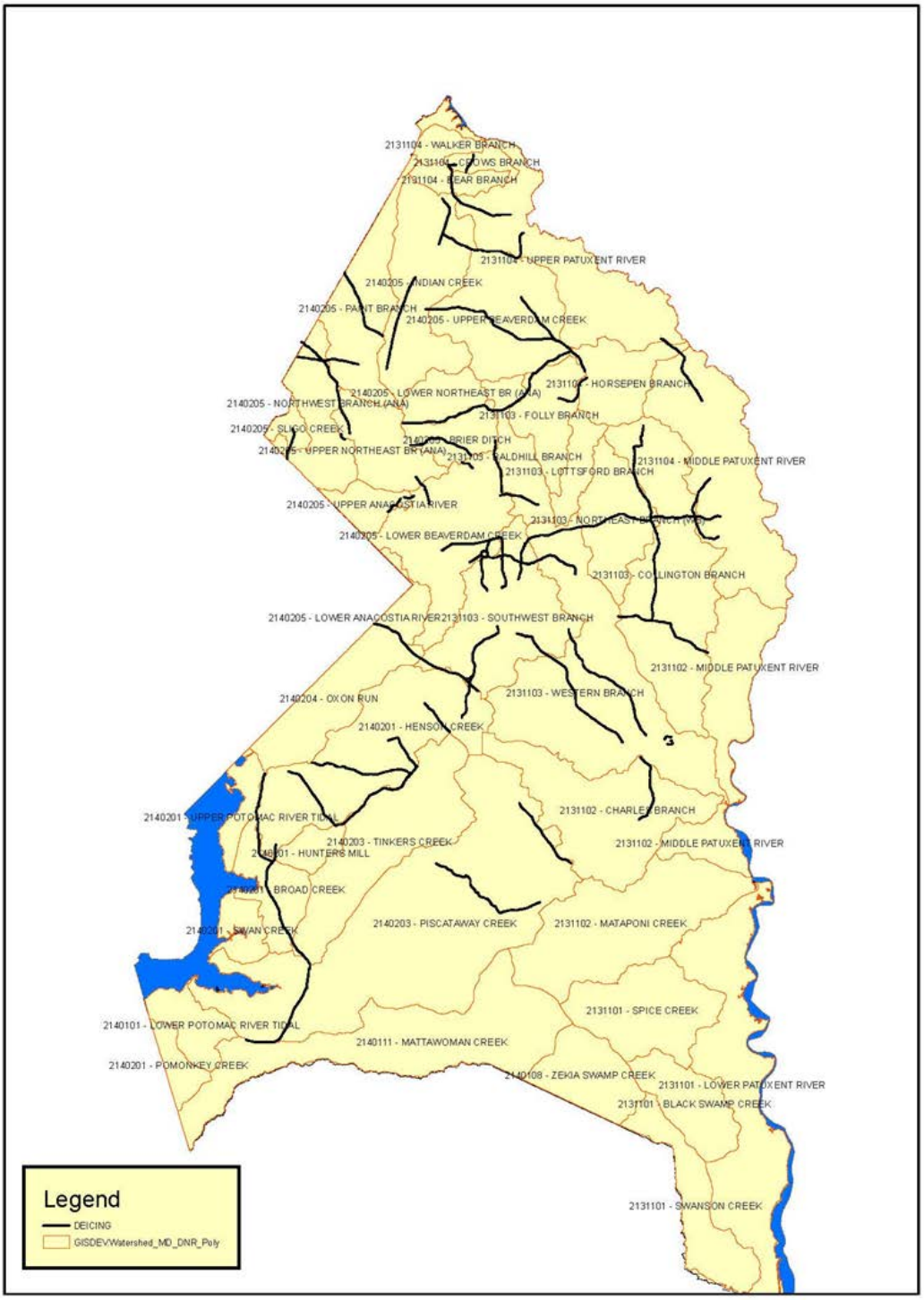
utilized. Figure D4 provides a graphic display of roadways in the deicing plan. OHMD plans to use this information as a tool to reevaluate where sensitive watersheds may warrant limited salt application.

DPW&T implemented the following operational activities to help manage and reduce salt application:

- Replacement of older equipment with newer, better functioning spreaders and hoppers.
- Eliminated long standing salt/sand stockpiles from the Ritchie Yard. While covered properly with a tarpaulin system, the EPA 2011 audit cited runoff emanating from the source. The removal of this pollutant source was identified as a goal in the NPDES Compliance Action Plan (CAP).
- Reinitiated a pretreatment de-icing program to help reduce salting application on arterial roadways.
- Continued training of equipment operators in the proper application and loading of salt.
- Plan for newer plow and spreading equipment acquisition including state-of-the-art calibration capabilities.

The County continues to reevaluate our salt management plan in an effort to reduce unnecessary salt application and spillage and to support this effort developed a "Prince Georges County Salt Application Management Plan" last year. Patterned after the Maryland State Highway Administration guidelines, the plan takes into consideration all aspects of salt management. A copy of the salt management plan is included with the County's on-site SWPPP documentation.

**FIGURE D4**
**SNOW AND ICE CONTROL PROGRAM – DE-ICING APPLICATION MAP**



## 6. PUBLIC EDUCATION

### *PUBLIC REPORTING*

CountyClick 311 is Prince George's County's main source of government information and access to non-emergency services through a call center. Citizens may also utilize alternative forms of communication for lodging water quality complaints, such as through email or by direct call. More information regarding the investigation and enforcement actions taken to resolve water quality complaints is provided under the IDDE program, beginning on page D-7.

### *EDUCATION AND OUTREACH*

DoE seeks every opportunity to promote environmental awareness, green initiatives, and community involvement to protect our natural resources and promote clean and healthy communities. As human behavior is a significant source of stormwater pollution, the County provides a vast array of volunteer opportunities and services to control pollutants at the source, prevent stormwater pollution, and restore watersheds. The County also integrates water quality outreach as a vital component of watershed restoration projects.

#### *RAIN CHECK REBATE PROGRAM*

Prince George's County is committed to improving the quality of life for its communities by promoting green solutions to stormwater runoff. The *Rain Check Rebate Program* allows property owners to receive rebates for installing Rain Check approved stormwater management practices. Homeowners, businesses, and nonprofit entities (including housing cooperatives and churches) can recoup some of the costs of installing practices covered by the program.

This year the County published a series of brochures on its *Rain Check Rebate Program* to raise stormwater pollution awareness and educate the residential, business, and industrial sectors on rebates available to them for installing approved stormwater best management practices (BMPs). These brochures, as listed below, provide a brief and informative overview of a specific practice and provide helpful, non-technical information on BMPs, including how they improve Prince George's water resources. The County may use one or more of these materials, depending on the event audience, to promote stormwater awareness and environmental stewardship. Materials also include links to resources for audiences seeking additional information or more detailed advice.

1. Green Roofs: Benefit You & Your Community
2. Cisterns: Benefit You & Your Community
3. Pavement Removal: Benefit You & Your Community
4. Rain Barrels: Benefit You & Your Community
5. Permeable Pavement: Benefit You & Your Community
6. Rain Gardens: Benefit You & Your Community
7. Urban Tree Canopy: Benefit You & Your Community
8. Rain Check Rebate Program

*EVENTS*

During the reporting year, DoE hosted 79 environmental events. In addition to our extensive environmental public participation programs, which are primarily targeted to the County's adult population, DoE is also committed to the environmental education of our youth. An overview of the outreach events and participants is provided in Table D38.

| TABLE D38<br>2014 DoE ACTIVITIES | | | | |
|---|---|---|---|---|
| **Activity/Event** | **Type** | **Date** | **Host Agency** | **Number of Attendees** |
| Recycle Your Christmas Tree | Community Outreach | 12/26/2013 – 02/01/2014 | DoE, WMD | N/A |
| Henderson Neighborhood Watch | Community Outreach/Ban on Plastic | 01/14/2014 | DoE, SID, WMD | 56 |
| Healthy Homes Exposition | Community Outreach | 01/22/2014 | DoE, SID | 72 |
| District IV Community Coffee Roundtable | Community Outreach/Ban on Plastic | 01/22/2014 | DoE, WMD | 100 |
| The World Bank Corporate Healthy Homes Expo | Community Outreach | 01/23/2014 | DoE, WMD | 5,000 |
| Baltimore Works | Community Outreach | 01/29/2014 | DoE, SID | 30 |
| Fire Department Citizen Advisory Committee | Community Outreach | 01/29/2014 | DoE, SID | 25 |
| Civic Association Meeting (Clinton, MD) | Community Outreach | 02/02/2014 | DoE, WMD | 25 |
| Home Show | Residential Stormwater Abatement | 02/07-09/2014 | DoE, SID | 151 |
| Home Show | Stormwater Presentation | 02/07-09/2014 | DoE, SMD | 20 |
| University Park | Community Outreach/Ban on Plastic | 02/12/2014 | DoE, WMD | 75 |
| Collage Heights Civic Association | *RainCheck* Rebate | 02/12/2014 | DoE, SID | 35 |
| District I Community Coffee Roundtable | Community Outreach/Ban on Plastic | 02/19/2014 | DoE, WMD | 60 |
| Laurel Civic Association | *RainCheck* Rebate and *Tree ReLeaf* | 02/20/2014 | DoE, SID | 54 |
| Metro DC/Sustainability DC | Community Outreach/Food Scraps and Composting | 02/22/2014 | DoE, WMD | 30 |
| George Washington University | Current Stormwater Practices Used in PG County | 02/22/2014 | DoE, SMD | 40 |
| Temple Hills (TNI) Neighborhood Watch | *RainCheck* Rebate | 02/25/2014 | DoE, SID, WMD | 85 |
| Citizen Environmental Group | Trash | 02/18/2014 | DoE, SID | 20 |
| Career Day at Hillcrest Heights Elementary School | Water Pollution | 02/21/2014 | DoE, SID | 100 |
| Harmony Hall Homeowner Association | "Brown is the New Green" Presentation | 03/05/2014 | DoE, WMD | 75 |

| TABLE D38, CONTINUED<br>2014 DoE ACTIVITIES | | | | |
|---|---|---|---|---|
| **Activity/Event** | **Type** | **Date** | **Host Agency** | **Number of Attendees** |
| Roswill Homeowner Association, Riverdale | *RainCheck* Rebate | 03/12/2014 | DoE, SID | 25 |
| Meeting with Sustainable Generation | Community Outreach | 03/13/2014 | DoE, WMD | 15 |
| Stormwater Solutions: Rain Barrels and More (CHEARS) | *RainCheck* Rebate and Stormwater Abatement | 03/15/2014 | DoE, SID | 45 |
| Greater Baden Aquasco Citizen Association | *RainCheck* Rebate and Stormwater Abatement | 03/19/2014 | DoE, SID | 35 |
| The Environmental Action Council | Trash Hotspots | 03/19/2014 | DoE, SID | 20 |
| Pine Plains Civic Association | *RainCheck* Rebate and Stormwater Abatement | 03/20/2014 | DoE, SID | 78 |
| District Heights Civic Group | *RainCheck* Rebate and Stormwater Abatement | 03/27/2014 | DoE, SID | 55 |
| Behnke's Open House | *RainCheck* Rebate and Stormwater Abatement | 03/22-23/2014 | DoE, SID | 128 |
| Councilman Davis | Town Hall Meeting (Trash) | 03/27/2014 | DoE, SID | 26 |
| Bladensburg | "Taste of Bladensburg" (TNI) | 03/28/2014 | DoE, SMD | Unknown |
| Community Forklift | Residential Stormwater Abatement | 03/29/2014 | DoE, SID | 158 |
| Green Team Meeting (PGCPS) | Community Outreach | 04/03/2014 | DoE, WMD | 100 |
| Progressive Cheverly Forum | *RainCheck* Rebate | 04/03/2014 | DoE, SID | 35 |
| Potomac Bladensburg Waterfront Clean Up | Community Outreach | 04/05/2012 | DoE, WMD | 200 |
| Anacostia Watershed Earth Day Clean Up | Stormwater: What Can You Do? | 04/05/2014 | DoE, SID | 176 |
| Community Partners Meeting | Community Outreach/Ban on Plastic | 04/09/2014 | DoE, WMD | 220 |
| Reid Temple AME Church | *RainCheck* Rebate | 04/09/2014 | DoE, SID | 41 |
| Camp Springs Neighborhood Watch | Trash | 04/10/14 | DoE, SID | 20 |
| Prince George's Forestry Board | *RainCheck* Rebate | 04/16/2014 | DoE, SID | 7 |

| TABLE D38, CONTINUED<br>2014 DoE ACTIVITIES | | | | |
|---|---|---|---|---|
| **Activity/Event** | **Type** | **Date** | **Host Agency** | **Number of Attendees** |
| Marlboro Meadows HOA Meeting | Trash | 04/17/14 | DoE, SID | 40 |
| Spring Greening Fair | Stormwater: What Can You Do? | 04/19/2014 | DoE, SID | 35 |
| Chillum Ray HOA Meeting | Trash | 04/22/2014 | DoE, SID | 50 |
| Earth Day at USDA | *RainCheck* Rebate and *Tree ReLeaf* | 04/22/2014 | DoE, SID | 26 |
| EPA Region III | Community Outreach | 04/23/2014 | DoE, WMD | 38 |
| Earth Day Event | Community Outreach | 04/24/2014 | DoE, WMD | 400 |
| Lincoln Vista Community | Drainage Presentation | 04/24/2014 | DoE, SMD | 20 |
| Food and Drug Administration | Earth Day | 04/24/2014 | DoE, WMD | 400 |
| Bradbury Heights Elementary | Earth Day Presentation | 04/25/2014 | DoE, WMD | 450 |
| Arbor Day | Tree Planting | 04/25/2014 | DoE, SID | 410 |
| Christmas in April | Community Outreach/Litter Pick Up/Beautification | 04/26/2014 | DoE, WMD | 20 |
| Black Swamp's 5th Annual Plant Swap and Sale | Rain Barrels | 04/26/2014 | DoE, SID | 15 |
| Great American Cleanup | Community Outreach/Litter Pick Up | 04/26/2014 | DoE, WMD | 50 |
| Civic Association Meeting | DoE Presentation | 05/01/2015 | DoE, Director's Office | 20 |
| Woodbridge Crossing Homeowner Association (Laurel Senior Center) | Stormwater: What Can You Do? | 05/01/2014 | DoE, SID | 15 |
| Wegman's Circle Meeting | Community Outreach/Ban on Plastic | 05/07/2014 | DoE, WMD | 100 |
| WSSC | Children's Water Festival | 05/8 & 9/2014 | DoE, SID | 484 |
| Green Man Festival | Stormwater: What Can You Do? | 05/10/2014 | DoE, SID | 40 |
| Marlboro Day | Community Outreach | 05/10/2014 | DoE, WMD | 200 |
| Seabrook Neighborhood Watch | Community Meeting | 05/13/2014 | DoE, SID | 30 |
| Baden Library | *RainCheck* Program Overview | 05/14/2014 | DoE, SID | 3 |

| TABLE D38, CONTINUED<br>2014 DoE ACTIVITIES | | | | |
|---|---|---|---|---|
| **Activity/Event** | **Type** | **Date** | **Host Agency** | **Number of Attendees** |
| Clearview Manor Neighborhood Association (Birchwood City) | *RainCheck* Rebate and Stormwater Presentation | 05/15/2014 | DoE/SID | 15 |
| Compost Workshop | Community Meeting | 05/17/2014 | DoE, WMD | 150 |
| Councilman Olson | Community Meeting | 05/27/2014 | DoE, SID | 35 |
| Councilman Olson | Community Meeting | 05/28/2014 | DoE, SID | 28 |
| *Tree ReLeaf* Grant Program Kick Off | *Tree ReLeaf* | 05/29/2014 | DoE, SID | 19 |
| Cheverly Day | Community Outreach | 05/31/2014 | DoE, WMD | 100 |
| Councilman Olson | Community Meeting (*RainCheck* Rebate) | 06/03/2014 | DoE, SID | 110 |
| West Lanham Hills Citizen Association | Stormwater: What Can You Do?/Ban on Plastic/Bulky Trash | 06/04/2014 | DoE, SID, WMD | 78 |
| Behnke's Garden Party | Reducing Stormwater Through Baywise Practices | 06/07/2014 | DoE, SID | 30 |
| Chillum Ray Citizens Day | Community Outreach | 06/07/2014 | DoE, WMD | 150 |
| Brentwood | Reducing Stormwater Through Baywise Practices | 06/07/2014 | DoE, SID | 19 |
| WIC | Reducing Stormwater Through Baywise Practices | 06/11/2014 | DoE, SID | 30 |
| Community Meeting | Slope Failures (Fort Washington) | 06/13/2014 | DoE, SMD | 20 |
| Capitol Heights Day | Community Outreach | 06/14/2014 | DoE, WMD | 50 |
| P.G. Green Launch Event | Community Outreach | 06/14/2014 | DoE, WMD | 120 |
| Daisyfield Neighborhood Watch Meeting | Community Outreach/Ban on Plastic/Bulky Trash | 06/16/2014 | DoE, WMD | 15 |
| First Baptist Church of Glen Arden | Reducing Stormwater Through Baywise Practices | 06/20/2014 | DoE, SID | 20 |
| Jay Walker Community Day | Community Outreach | 06/21/2014 | DoE, WMD | 50 |
| Great Outdoors America Week at Bladensburg Park | Reducing Stormwater Through Baywise Practices | 06/25/2014 | DoE, SID | 66 |
| | | | **TOTAL** | **11,388 +** |

*WATER CONSERVATION*

As the public water supply utility for Prince George's County, the WSSC is lead agency tasked with educating the general public on water conservation issues. A major focus of WSSC's outreach campaigns is to promote pollution prevention as a means to protect our regional drinking water reservoirs. An overview of WSSC's outreach events, with a complete listing of community events, tours, and programs, is available for viewing at: http://www.wsscwater.com.

Additionally, WSSC is committed to providing students with educational information and experiences, and can provide a speaker for classroom or after-school programs (K-12). A variety of topics are available, including health benefits to drinking water, water conservation, and careers in the water industry. WSSC also provides science fair judges and presenters for career days.

*2014 $H_2O$ SUMMIT*

Live music and interactive activities for the entire family were featured at the 2014 summit held on Saturday, March 22, 2014 at the Silver Spring Civic Building. This free event was co-sponsored by WSSC and Montgomery County's Department of Environmental Protection, to underscore the message that everyone plays an important role in protecting the region's water and watersheds. This well attended event included more than 40 organizations and green vendors and featured roundtable discussions and sessions with local nonprofit, government, and university environmental experts on a variety of conservation topics.

*ADOPT-A-ROAD*

WSSC and its business partners adopted Sweitzer Lane in the Bear Branch watershed through the County's Department of Public Works and Transportation (DPW&T) Adopt-A-Road/Median Program. WSSC partnered with local businesses, individuals, its employees and retirees to help foster a sense of pride in their community by volunteering to aid in the upkeep of Sweitzer Lane.

*INVASIVE SPECIES REMOVAL*

WSSC continued to offer environmental steward opportunities to middle school, high school, and college students who need to earn class credits as well as neighbors and organizations who want to protect the environment. Volunteers assisted WSSC staff in removing invasive species, collecting trash, and planting trees throughout the sanitary district.

*ANNUAL CHILDREN'S WATER FESTIVAL*

The WSSC Children's Water Festival provides local school communities with hands-on learning activities that highlight life's most precious resource – water. More than 657 fourth graders from 9 Prince George's and 2 Montgomery County schools participated in the 9th annual festival, held at WSSC's Brighton Dam Visitor's Center in Brookeville on May 7 and 8, 2014. Of the 657 students that participated 483 were from Prince George's County.

Led by WSSC program staff, and in partnership with local agencies such as DoE, students took part in thirteen hands-on activities about drinking water, wastewater, wetlands, the water cycle, aquatic life, human health and the value of water. For example, *Bucket Brigade*, an obstacle course, challenges children to accumulate 70 gallons of water, the amount of water each

person uses per day. The challenge forced students to rethink how much water they use on a daily basis. The *Hydrologic Game* involved all 657 students in a *Jeopardy*-style competition that helped the youngsters learn and discuss how water is a limited resource, how everyone uses water, and how we can conserve water.

*TAKING BACK UNWANTED PRESCRIPTION DRUGS*

WSSC is again supporting the Drug Enforcement Administration (DEA) initiative to promote safe disposal of drugs and convey the impact of drugs on our nation's water supply. WSSC reached out to its customers and the general public to take part in the DEA's Prescription Drug Take Back Day on April 26, 2014. The *Take-Back Initiative* is an opportunity to safely dispose of prescription and over-the-counter drugs, protecting families from potential misuse and abuse, and protecting the sources of our drinking water.

*CAN THE GREASE*

Fats, Oil and Grease (FOG) contribute to more than 40 percent of sanitary sewage overflows (SSO). SSOs can discharge into storm drains and creeks causing a potential health and environmental hazard. WSSC partners with the Restaurant Association of Maryland to help the food service industry understand the problems associated with FOG discharges. Business owners are provided assistance in managing FOG correctly through the use of BMPs.

WSSC has a *Can the Grease* initiative that targets restaurants, citizens, and community groups. WSSC has also developed a number of brochures and fliers such as "Don't Let Sewer Back-Ups Happen to You," "Fat-Free Sewers," "Can the Grease," and "Ponga La Grasa en una Lata" as well as a PowerPoint for community groups. Copies of these materials can be obtained at http://www.wsscwater.com/home/jsp/content/canthegrease.faces.

*SEWER SCIENCE PROGRAM*

*Sewer Science* is a hands-on program designed to educate high school students about wastewater treatment and careers at the WSSC. Through a random drawing, students from Gwynn Park High School were selected to participant, and visited the Parkway Wastewater Treatment Plant on April 29, 2014. In a laboratory setting, they created a replica of a wastewater treatment plant that includes the stages of the treatment process: primary sedimentation, biological treatment, and secondary sedimentation. The day concluded with a tour of the plant.

## *STORMWATER MANAGEMENT FACILITY MAINTENANCE*

*PILOT POND COMMUNITY PROGRAM*

The Office of Project Management (OPM) DPW&T is working in a partnership with the Neighborhood Design Center (NDC) and residential communities in a pilot pond community program. DPW&T is responsible for all publicly-owned SWMFs with storm drain maintenance being the Departments largest operational function. Recognizing the opportunity to leverage limited resources and improve the overall management of the County ponds, DPW&T developed a Pilot Pond Community Program with several communities. The program addresses the limited functionality and poor aesthetics of our older ponds and works to improve water quality and make publicly-maintained SWMFs more of a community amenity. The key points of the program are:

- DPW&T would perform a detailed inspection of the existing facility and perform all required functional improvements to bring the facility to design standards and, as part of the program, retain this responsibility.
- DPW&T would provide a Landscape Architect to work with the community to develop an aesthetically pleasing and technically compliant plan to improve the pond and aesthetics of the surrounding area.
- DPW&T would both contract for and pay for these aesthetic improvements.
- Community would execute a binding agreement/memorandum of understanding (MOU) with the County to perform all non-functional maintenance on the pond to include grass cutting, trash and litter pick up, as well as maintenance of all installed landscaping, hardscaping, or street furniture.

This program was started in 2010. The NDC continued to assist DPW&T in resolving common landscaping problems around SWMFs including removing of invasive plants, clearing of outfall debris, and addressing of algal blooms.

*BMP INSPECTION PROGRAM FOR PRIVATE SWMF*

The County is cognizant that the successful implementation of the Preventative Maintenance Inspection Program requires extensive outreach to the regulated community, as property owners may be unaware of the legal responsibility for BMP inspection and maintenance. As needed, program outreach materials, including the Your Business Connection to the Bay: Simple Steps to Protect Our Waterways, are sent to property owners to educate them of their private BMP maintenance responsibilities. One-to-one outreach is also conducted with property owners or their representative during the inspection process. To further emphasize the need for compliance, the County provides property owners and on-site managers with a written assessment of the inspection results and a compliance schedule.

*HOUSEHOLD HAZARDOUS WASTE*

The *Household Hazardous Waste and Electronics Recycling* brochure promotes the proper disposal of chemicals and hazardous waste and eCycling opportunities available to County residents. The brochure, both in English and Spanish, stresses the importance of safe disposal of hazardous waste and opportunities for recycling unwanted electronic devices. The County maintains a permanent Household Hazardous Waste Acceptance Site, open and free-of-charge to County residents, at the Brown Station Road Sanitary Landfill (BSR) in Upper Marlboro. The County contracts with Care Environmental Corporation, a licensed hazardous waste disposal company, to ensure the proper handling and disposal of all hazardous materials collected at the site. Additionally, the County continues to provide a "front door" waste pickup service option for elderly or disabled residents who qualify for this free service. Approximately 4,722 vehicles dropped off hazardous and electronic waste this reporting year. A summary of the materials collected are listed below:

- 111.16 tons of electronics;
- 61,332 gallons of liquid household hazardous waste; and
- 26.52 tons of solid household hazardous waste.

## *LAWN CARE AND LANDSCAPE MANAGEMENT*

### *PRINCE GEORGE'S MASTER GARDENERS PROGRAM*

The Maryland Master Gardener Program was started in 1978 as a means of extending the horticultural and pest management expertise of University of Maryland Extension Service (UMES) to the general public. The program is designed to train volunteer horticultural educators for UMES – the principal outreach education unit of the University of Maryland (UM). Participants receive 40-50 hours of basic training from UM professionals in return for volunteering within their community, teaching Marylanders how to manage sustainable landscapes.

Prince George's Master Gardeners are a part of the *Maryland Bay-Wise Program* offered by the UMES. This program focuses on water quality and it is consists of a wide-ranging set of environmental topics that affect the quality and quantity of water in Maryland. Although most of the topics relate to landscape management, a few address household issues such as wells and septic systems, hazardous household products, and water conservation. The County's Master Gardeners teach citizens and residents ways to decrease the amount of toxins, nutrients, and sediments that flow with stormwater into our streams that lead to the Chesapeake Bay.

Prince George's County recognizes and demonstrates the importance of this program by funding the Master Gardener Coordinator's position at UMES. The talents and skills of the Master Gardener Coordinator was used to instruct new recruits, coordinate and lead workshops and plant clinic classes, and coordinate and lead community education and outreach programs. A list of the lectures and workshops related to stormwater management and water quality are indicated in the table below. A list of the activities related to stormwater management and water quality are shown in Table D39.

**TABLE D39**
**2014 MASTER GARDENER ACTIVITIES**

| Date | Activity | Content | Number of People |
|---|---|---|---|
| February 7, 2014 | Presentation | *Rain Check Rebate Program* (Show Place Arena) | 151 |
| March 29, 2014 | Presentation | *Maryland Bay-Wise Program* (Community Forklift) | 58 |
| April 2, 2014 | Instruction | *Maryland Bay-Wise Program:* New recruits received 3 hours instruction on soils and fertilizers, integrated pest management, and abiotics; 2 hours instruction on lawns and fertilizers; and 1 hour instruction on Bay-Wise landscapes, native plants, and composting. | 28 |
| April 3, 2014 | Certification | *Maryland Bay-Wise Landscape Management Advanced Training* | 6 |
| May 11, 2014 | Certification | *Maryland Bay-Wise Program:* 2 residential properties and 6 demonstration gardens | 8 |
| May 17, 2014 | Presentation | *Maryland Bay-Wise Program* (New Carrollton Garden Club) | 15 |
| June 17, 2014 | Display | *Maryland Bay-Wise Program* (Behnke's) | 50 |

*EDIBLE DEMONSTRATION GARDEN AT PRINCE GEORGE'S DPW&T D'ARCY ROAD FACILITY*

The Edible Demonstration Garden located at the DPW&T D'Arcy Road Facility provides County employees and local residents contact with nature. The natural setting of the garden is ideal for environmental education and horticulture programs whose goals are to demonstrate that an edible landscape is sustainable, affordable, and productive.

The 'edible garden,' sometimes referred to as a learning landscape, uses Bay-Wise landscaping practices that focus on water quality. As gardeners we can contribute to a cleaner local waterway by adhering to the following environmentally-sound landscaping approaches:

- Feed the soil and fertilize wisely
- Water efficiently
- Plant wisely
- Recycle yard waste
- Manage garden pests with Integrated Pest Management (IPM)
- Protect the soil with mulch or cover crops
- Control stormwater runoff

*NEIGHBORHOOD DESIGN CENTER*

The NDC, a local non-profit located in Riverdale, is an important partner in many County initiatives. They furnish pro-bono design and planning services to a wide variety of individuals, organizations, and low-to-moderate income communities. Their goal is to involve the entire community in the development and implementation of initiatives and projects designed to revitalize neighborhoods. NDC develops plans for parks, playgrounds, gardens, and community plantings, including wetland and rain gardens, reforestation projects, and median and shade tree plantings. Collectively, these efforts have increased the County's green space, reduced stormwater runoff, and improved water quality through the creation of natural systems to cleanse stormwater runoff. Table D40 summarizes the major partnership projects completed during this reporting year.

**TABLE D40**
**NDC LANDSCAPE DESIGN ASSISTANCE (JANUARY 01 – JUNE 30, 2014)**

| |
|---|
| **Prince George's County: Arbor Day Planting**<br>NDC provided the landscaping plans for the Arbor Day Celebration held at Longfields Elementary School in Forestville, Maryland. |
| **Action Guides**<br>NDC is currently developing a series of outreach and engagement guides for distribution at public events, forums, and workshops. Currently, there are four guides available: *How to Plant a Tree*, *How to Design a Pollinator Garden*, *How to Identify Weeds*, and *How to Winterize Your Home*. |
| **Prince George's County: Department of Public Works and Transportation (Stormwater Ponds)**<br>NDC works with community, civic, and homeowner associations to promote DPW&Ts Stormwater Pond Retrofit and Beautification Program which addresses pond improvements and aesthetics; DPW&T performs functional maintenance on ponds and NDC designs aesthetically-pleasing landscaping plans for the ponds; in exchange, the associations take on the responsibility of landscape maintenance and agree to contact the county for any functional maintenance required. |

**TABLE D40, CONTINUED**
**NDC LANDSCAPE DESIGN ASSISTANCE (JANUARY 01 – JUNE 30, 2014)**

**Prince George's County: Department of Public Works and Transportation (*Right Tree, Right Place Program* [Bradford Pear Tree Replacement Program])**

The *Right Tree, Right Place Program* [Bradford Pear Tree Replacement Program]) is a risk management program developed to systematically remove and replace dead, dying, and high risk street trees in the county many of which were Bradford Pears. The program continues to be well received by those who enjoy the aesthetic and environmental benefits of street trees, and NDC fields dozens of calls each week with requests for trees, tree removal, and clarification of work being performed in communities. (see Figure D5 for trees replaced within TNI areas, and Table D41 for number of trees planted since program inception).


*Left: Sample of outreach piece used to promote "Clean Up, Green Up" program.*

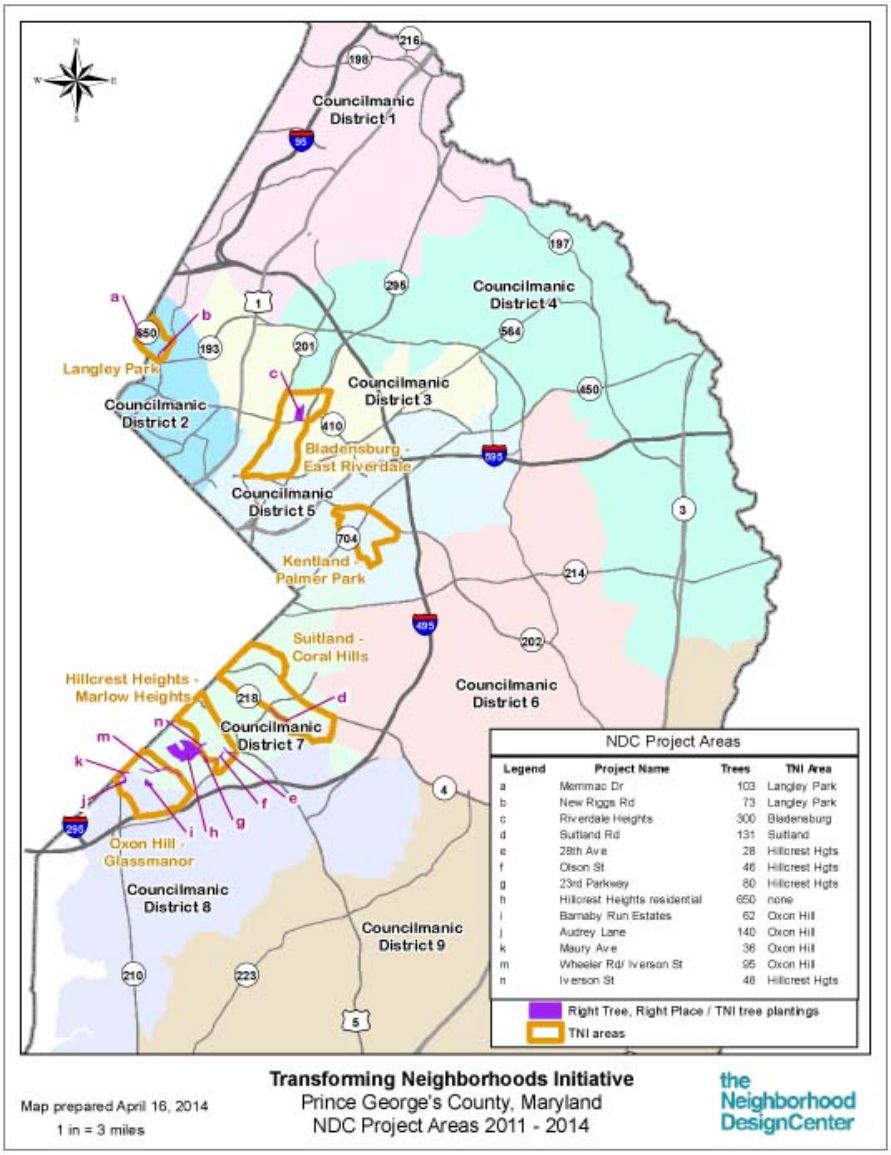
*Right: One of four outreach and engagement guides used by NDC.*


*Left: Trees in the Fox Run Estates subdivision located in Clinton, MD are Shumard Oaks.*

*Top: NDC removed invasive Bradford Pears in New Carrollton before planting American Linden trees.*

These street trees, planted by the Neighborhood Design Center in March 2014, play a significant role in stormwater management by reducing the amount of stormwater runoff that enters the storm drain system. The trees serve as miniature reservoirs to control stormwater runoff at the source and in the community. The leaves and branches of the tree divert and absorb rainwater, decreasing the amount of water that reaches the ground, and allowing the water to slowly soak into the soil. Street trees have demonstrated value in reducing runoff and mitigating the costs of stormwater management.

**FIGURE D5**
***RIGHT TREE, RIGHT PLACE PROGRAM* PROJECT AREAS**



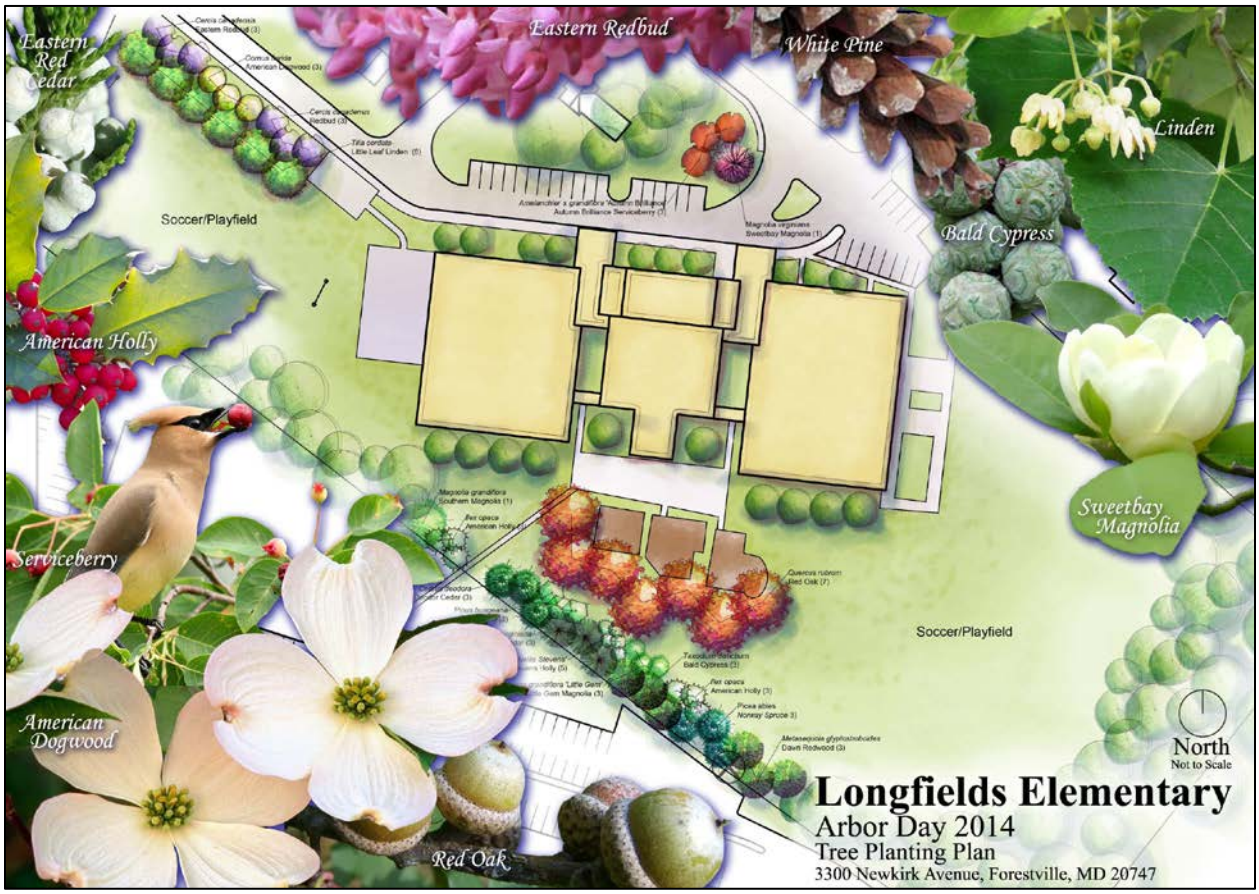

| **TABLE D41**<br>***Right Tree, Right Place Program* TREES REPLACED (2011-2014, INCLUDES TNI AREAS)** | |
|---|---|
| **NPDES Year** | **Trees Planted (approximate)** |
| July 1 – October 31, 2011 | 1,400 |
| November 1, 2011 – October 31, 2012 | 4,500 |
| November 1, 2012 – December 31, 2013 | 4,300 |
| January 1, 2014 – July 01, 2014 | 5,300 |
| **TOTAL** | **15,500** |

*ARBOR DAY*

The annual Prince George's County Arbor Day celebration was held on April 25, 2014 at Longfields Elementary School in Forestville. During the celebration, the Honorable Rushern L. Baker, III, County Executive, who was represented by Aubrey Thagard the DCAO, accepted the County's 30th consecutive Tree City USA Award on behalf of Prince George's County. Horace Henry, Southern Region Urban and Community Forestry Coordinator, Maryland Department of Natural Resources (MD DNR), presented the award to the DCAO.

After the presentation ceremony, the ceremonial Arbor Day tree was planted by invited dignitaries and honored guests. The Prince George's County Beautification Committee, staff from DoE, DPW&T, OCS, MD DNR Forest Service, M-NCPPC, NDC, PGSCD, and Prince George's County Public Schools (PGCPS) helped each class plant 16 trees – one for each class in the school. An additional 53 trees were planted on school grounds, making a total of 69 trees planted which helped to make Longfields a "green" school. A tree planting plan is presented in Figure D6.

**FIGURE D6**
**ARBOR DAY PLANTING DETAIL**
**(PROVIDED BY NDC)**



*PRINCE GEORGE'S BEAUTIFICATION COMMITTEE*

This year marked the 43rd anniversary of the Prince George's County Beautification Committee, an all-volunteer organization dedicated to honoring the landscaping efforts of those in the community who make a difference. The annual Beautification Awards Ceremony recognizes excellence in gardening and landscape design. Entries are judged using the National Garden Clubs, Inc. Standards for Evaluating Landscape Design, rating on first impression, suitability of design to purpose, design, implementation, sustained maintenance, and final impression. This year the Committee recognized over 66 individuals and organizations during an event held at the Newton White Mansion.

*TREE RELEAF GRANT PROGRAM*

The COPE Section of DoE, in partnership with the City of College Park, kicked-off the re-launch of its existing tree grant program at 10 a.m. on Thursday, May 29 at the intersection of 54th Avenue and Navahoe Street in College Park. The newly named *Tree ReLeaf Grant Program* fosters the enhancement of natural environments in Prince George's County through tree planting grants. The City of College Park was the first municipality to participate in the revamped program, and to date has received more than $4,000 in grant money to plant a total of 46 native trees and shrubs in the right-of-ways along city streets.

The *Tree ReLeaf Grant Program* is a countywide program that provides up to $5,000 to civic, neighborhood, community and homeowner organizations, and schools and libraries to plant native trees and shrubs in public or common areas. A municipality can receive up to $10,000 for plantings. The program requires a 50 percent match which in turn provides a hands-on opportunity for applicants to learn how to properly plant and care for trees and shrubs. Currently, $25,000 has been approved for trees and shrubs going in the ground this fall.

*LITTER CONTROL, RECYCLING, AND COMPOSTING*

*LITTER CONTROL*

*Storm Drain Stenciling*

This information has been provided on page D-12.

*Neighborhood/Community Cleanups*

The Neighborhood Cleanup Program, facilitated by DoE, assists communities in cleanup efforts to control litter. Active participation in the cleanup of a local neighborhood, park, road, street, or pond removes potential stormwater pollutants and builds community pride. Many participating groups further enhance and beautify their areas by planting trees, sowing seeds, weeding, watering, and mowing grass. A list of community participation projects and an estimate of the tonnage of trash collected is provided in Table D42.

| TABLE D42<br>VOLUNTEER NEIGHBORHOOD CLEANUP SUMMARY (01/01/14-06/30/14) | | | |
|---|---|---|---|
| **Date** | **Group** | **Number of Volunteers** | **Tons of Trash Collected** |
| March 8, 2014 | Town of Capitol Heights | 130 | 8.00 |
| April 5, 2014 | Bladensburg Waterfront Park (AWS) | 250 | 1.30 |
| April 5, 2014 | Lower Beaverdam (AWS) | 90 | 7.58 |
| April 5, 2014 | William Wirt (AWS) | 130 | 2.27 |
| April 5, 2014 | Cool Spring (AWS) | 65 | 1.18 |
| April 5, 2014 | Hard Bargain Farm (AFF) | 125 | 1.25 |
| April 5, 2014 | Oxon Hill Farm (AFF) | 60 | 0.16 |
| April 5, 2014 | Fort Washington Marina (AFF) | 45 | 0.74 |
| April 5, 2014 | National Colonial Farm (AFF) | 50 | 1.00 |
| April 5, 2014 | Riverview Estates (AFF) | 25 | -- |
| | **TOTAL** | **970** | **23.48** |

*Comprehensive Community Cleanup Program*

The CCCP is designed to revitalize, enhance, and help maintain unincorporated areas of the County. DoE and DPW&T work with local civic and homeowner associations to provide a wide range of cleanup and maintenance services over a two-week period. Services provided by this program include bulky trash collection, the tagging and removal of abandoned vehicles, Housing Code/Zoning Ordinance violation surveys, storm drain outfall screening/sampling, roadside litter pick-up, tree trimming, and storm drain maintenance. Although the focus of the program is aesthetic improvement of communities, the County services provided also benefit water quality by removing potential stormwater pollutants including the proper disposal of trash and debris from private property through a scheduled bulky trash pickup, the elimination of heavy metals and toxic substances by towing abandoned vehicles and removing potential pollutants from being discharged into waterways through inlet cleaning. Summaries of outfall screening and inlet cleaning are provided on pages E-8 and E-24, respectively. Additional programmatic achievements are summarized in Table D43.

| TABLE D43<br>COMPREHENSIVE COMMUNITY CLEANUP ACHIEVEMENTS (01/01/14-06/30/14) | | | | | | |
|---|---|---|---|---|---|---|
| **Community** | **Code Enforcement** | | **Bulky Trash** | | **Vehicle Audit** | |
| | Housing Violations Issued/No. | Zoning Violations Issued/No. | Tires Collected/ No. | Trash Collected/ Tons | Violations Issues/No. | Vehicles Towed/No. |
| **Spring 2014 Cycle** | | | | | | |
| Beltsville (Phase 1) | 18 | 0 | -- | -- | 4 | 1 |
| Beltsville (Phase 2) | 18 | 0 | 0 | 3.05 | 11 | 5 |
| Beltsville (Phase 3) | 23 | 18 | 0 | 2.66 | 15 | 6 |
| Beltsville (Phase 4) | 23 | 11 | -- | -- | 0 | 0 |
| Willow Wood Estates | 14 | 0 | 6 | 7.24 | 3 | 0 |
| Camp Springs (Phase 1) | 56 | 0 | 7 | 7.24 | 9 | 2 |
| Camp Springs (Phase 2) | 21 | 0 | 6 | 4.38 | 9 | 3 |
| Camp Springs (Phase 3) | 43 | 0 | 6 | 3.16 | 3 | 1 |
| Chillum-Ray | 12 | 0 | 5 | 5.44 | 32 | 14 |
| Eastpines | 81 | 0 | 6 | 9.53 | 8 | 1 |
| Marlboro Meadows (Phase 1) | 66 | 0 | 0 | 3.66 | 7 | 2 |
| Marlboro Meadows (Phase 2) | 24 | 0 | 2 | 4.53 | 2 | 1 |
| Lewisdale (Phase 1) | 81 | 0 | 1 | 4.16 | 15 | 6 |
| Lewisdale (Phase 2) | 3 | 7 | 0 | 4.38 | 25 | 13 |
| Lewisdale (Phase 3) | 27 | 0 | -- | -- | 9 | 4 |
| Springdale | 13 | 2 | 8 | 6.54 | 20 | 8 |
| **TOTAL** | **523** | **38** | **47** | **65.97** | **172** | **67** |

*RECYCLING*

The WMD of DoE administers County services and programs to reduce solid waste, including recycling, composting, and hazardous materials recovery and disposal. The County continues to host countywide recycling events, as listed in Table D44, to shred documents and dispense free mulch recycled from Christmas trees. These events offer residents of the County an opportunity to conserve natural resources, save energy, and reduce the amount of waste going to the landfill, all positive actions that help to protect the environment.

| TABLE D44<br>COUNTYWIDE WASTE REDUCTION PARTICIPATION EVENTS<br>(JANUARY 01, 2014 – JUNE 30, 2014) | | | |
|---|---|---|---|
| **Name of Event (Participant)** | **Date of Event** | **No. of Participants** | **Tons** |
| Mulch Giveaway | 04/19/2014 | 855 | 280 |
| **TOTAL** | | **855** | **280** |

*Single-Stream Recycling*

The County's single stream recycling program is heavily promoted through direct mail, press releases, newspaper advertisements, displays, and speaking engagements. The County's MRF processes glass bottles and jars, plastic containers, aluminum, steel, bi-metal cans, and newspaper from 170,000 residences served by the residential curbside single-stream recycling program and merchants (commercial sector). Today, the County's MRF is operating with the latest state-of-the-art equipment to accommodate single-stream recycling, processing over 134,000 tons annually.

An educational single-stream recycling display is housed at the MRF and can travel to community events, public libraries and office buildings throughout the County. Tours of the MRF are open to the public, schools, and recycling coordinators, educating over 2,000 individuals annually.

*County Office Recycling Program (CORP)*

On October 1, 2011, the CORP began single-stream recycling in County offices. An outreach campaign was developed to educate employees on the transition from dual-stream to single-stream collection and increase the amount of recycling collected from County offices. The CORP, which has been in existence since 1990, now serves 82 local County offices; all locations are serviced on a regular pickup schedule. All forms of paper and commingled materials are collected from these facilities by a County contractor. On average 25.29 tons of recyclables are collected monthly with 8 locations also recycling toner cartridges. Nearly 1 ton of toner cartridges are recycled annually through a contract with Recycling Ink.

*Source Reduction & Recycling*

The *Source Reduction – Stop Waste Before it Starts* brochure, available in English and Spanish, provides tips for reducing waste at home, in the yard, and in the office. The brochure also promotes the use of reusable bags rather than non-biodegradable plastic shopping bags. In order to reinforce their recycling and source reduction message, Recycling Section (RS) staff regularly distributes outreach materials, gives presentations, and offers giveaways at community and other special events.

*Business Recycling and Source Reduction*

Businesses play an important role in the County recycling programs with approximately one-half of the solid waste stream coming from the business sector. Businesses also account for two-thirds of the County's current recycling rate. This reporting period Prince George's County Council passed CB-87-2012 which includes new mandatory business, commercial, and industrial recycling requirements.

RS staff assists in the development and implementation of successful source reduction plans and recycling programs. The types of assistance may include site visits for identifying waste that can be recycled, matching interested businesses with local mentors who have successful recycling programs, or providing technical assistance needed to start up a recycling program. Additionally, DoE is in the process of hiring inspectors to enforce CB-87-2012 mandates.

*COMPOSTING*

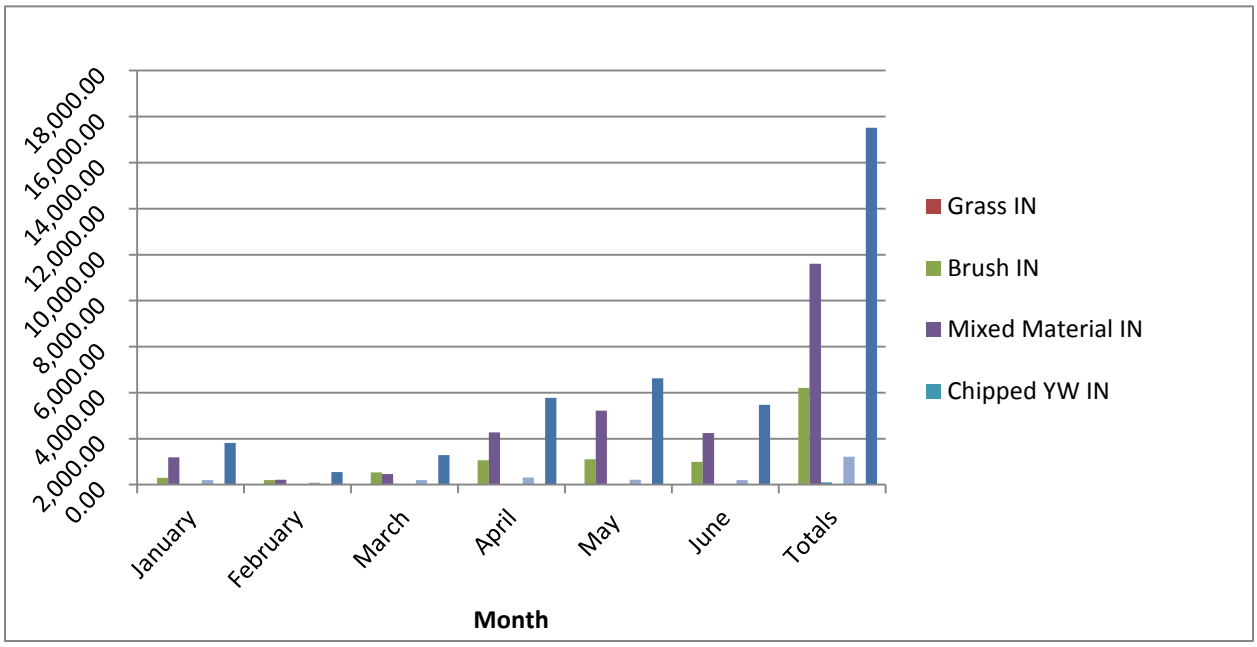
*Food Scraps*

During this reporting period, the County has been piloting food scrap composting utilizing GORE® Cover System technology, diverting more than 2,000 tons of food scraps from the landfill into 100% organic compost.

*Yard Waste*

The Western Branch Yard Waste Composting Facility (aka Western Branch), operated by the Maryland Environmental Service (MES), accepts yard waste from approximately 170,000 households in the County. The yard waste composting program, including the Christmas tree recycling, diverts a significant tonnage of materials from our solid waste stream, as shown in Figure D6. Leafgro® is sold to the nursery trade, with the revenue generated from the sale returned to the County to offset the cost of the composting operation.

**FIGURE D7**
**YARD WASTE COMPOSTING – FISCAL YEAR 2013**




*CAR CARE, MASS TRANSIT AND ALTERNATIVE TRANSPORTATION*

Each year, vehicles release hundreds of tons of harmful emissions into the air we breathe. As atmospheric deposition of nitrogen in the region is a significant source of pollutants, carpooling, vanpooling, bicycling, and using mass transit helps to reduce emissions and protect both air and water quality. Sharing a ride, taking public transportation, and bicycling means fewer vehicles on the road, making the commute to work smoother, quicker, less expensive, easier, and cleaner for everyone. DPW&T provides many services to the residents of Prince George's County, as described below.

*RIDE SMART*

The *Ride Smart Commuter* website, a service of DPW&T, is designed to provide commuters and employers in Prince George's County with a comprehensive list of transportation solutions available throughout the Washington Metropolitan Area.

*RIDEMATCHING NETWORK*

The County continues to participate in the Commuter Connections Ridematching Network, a free carpool/vanpool match service available to persons living and/or working in the County. This service is part of a network of Washington Metropolitan commuter transportation organizations and is coordinated by MWCOG.

*BIKING TO WORK*

Literature on biking to work in the Washington Metropolitan Area is produced by Commuter Connections and the Washington Area Bicyclist Association. This guide, written for employers and employees, promotes cycling as a healthy, clean, quiet, economical, and fun way to get to work. The County annually participates in the regional "Bike to Work Day" activities. In January 2015, the County will begin installing bicycle racks on all ***TheBus*** fixed-route vehicles to continue supporting residents, visitors, and employees who choose to bike in the County.

*PRINCE GEORGE'S COUNTY VANPOOL SUBSIDY PROGRAM*

Since the startup period for a new vanpool is the most difficult time, any qualifying individual who starts a new vanpool is eligible to receive a generous startup subsidy from the County. This program assists residents seeking to start a new vanpool with startup costs and assistance with finding passengers. This three-month subsidy program covers 100% of the first month's vehicle rental fee (not to exceed $700), 50% of the second month's vehicle rental fee (not to exceed $350), and 25% of the third month's vehicle rental fee (not to exceed $175). A County Rideshare Coordinator is also available to assist groups in forming a vanpool and maintaining ridership.

*PARK AND RIDE*

Prince George's County in partnership with the state of Maryland and private parking lot owners maintains 13 free park and ride fringe parking lots, conveniently located throughout the County. These lots provide ideal locations for meeting a carpool, vanpool, or for connecting with ***TheBus***, Metrobus or other local transit systems. The 13 lots are:

- Bowie Fringe Parking: MD Route 197 and Northview Drive
- South Laurel: MD Route 197 and Briarcroft Lane
- Montpelier: MD Route 197 and Brock Bridge Road
- Clinton Fringe Parking: MD Route 5 and Woodyard Road
- Equestrian Center: MD Route 4 in Upper Marlboro
- Fort Washington: MD Route 210 and East Swann Creek Road
- Oxon Hill Fringe Parking: MD Route 210 and Oxon Hill Road
- Beltway (I-494/I-95): I-95 and the Capital Beltway
- Laurel Fringe Parking: Sandy Spring Road and Van Dusen Road
- Accokeek Fringe Parking: MD Route 373 and MD Route 210
- Bowie Market Place: MD Route 450 and Stoneybrook Drive

- Capital Plaza Mall: MD Route 450 and Baltimore-Washington Parkway
- Penn Mar Shopping Center: Donnell Drive and Marlboro Pike

*METRORAIL*

Operated by the Washington Metropolitan Area Transit Authority (WMATA), Metrorail currently serves 86 stations throughout the Washington Metropolitan Area, much of it underground. The system intersects at various points, along 106 miles of track, making it possible for passengers to travel anywhere on the system. Currently, 15 Metrorail stations are conveniently located throughout the County providing access to all citizens and residents.

The County is one of WMATA's Compact Jurisdictions and subsidizes the cost of all WMATA bus and rail service provided in Prince George's County. County transportation staff work cooperatively with WMATA to plan and enhance existing and future public transit services that complement the County Executive and Council goals to meet the transportation needs of Prince George's County residents, visitors, and employees.

***TheBus**, CALL-A-BUS, AND CALL-A-CAB*

***TheBus*** is Prince George's County's public transit system. Schedule information is available through the Internet at *www.princegeorgescountymd.gov* or *www.NextBus.com*. Area specific transit guides offer comprehensive information on public transportation, including transit options. As a partner in a TIGER Grant on behalf of the region, DPW&T was able to install several real-time information displays at bus stops throughout the County as well as a CEIDS at the bus stop located at Silver Hill Road and Pennsylvania Avenue in Forestville. The DPW&T projected ridership for the bus during January 2014 through November 2014 is around 3.4 million passengers.

In 2015, patrons will be able to see all of ***TheBus*** transit stops on Google® maps. The County also provides a demand response, curb-to-curb service *Call-A-Bus*, a complementary ADA/Paratransit curb-to-curb service. Service is available to all residents of Prince George's County who are not served by or cannot use existing bus or rail services. However, priority is given to seniors and persons with disabilities. Persons with disabilities must provide their own escort, if needed. Service animals are allowed for the visually impaired.

The Taxicab Licensing Section of the Office of Transportation (formerly in the Department of the Environment) licenses over 1,300 taxicab operators that provide fee-based services to residents and visitors in the County. A subsidy service provided by the County via Maryland state grants is the *Call-A-Cab* coupon service for seniors and disabled patrons. This program enables seniors and disabled patrons to purchase reduced price taxicab coupons.

# E. RESTORATION PLANS AND TMDL

### *WATERSHED ASSESSMENTS*

Prince George's County, population 871,233 (2011 Maryland State Data Center), is located in the south-central portion of Maryland with a geographic area of 498 square miles, 487 square miles of land and 11 square miles of water. A major drainage divide bisects the County in a north-south direction, with approximately half of the County draining in an easterly direction to the Patuxent River, and the remaining half of the County draining in a westerly direction to the Potomac River. Lands draining to the Patuxent River are primarily located in the County's rural tier and, with the exception of the Western Branch watershed. A map of the County's major watersheds is shown in Figure E1.

The County will complete detailed watershed assessments for all County watersheds that are based on MDE's TMDL analysis. Since 1999 the County has been implementing biological monitoring and assessment of streams and watersheds countywide. Sampling at an individual stream location includes benthic macroinvertebrates, physical habitat quality, and *in situ* water quality (pH, conductivity, temperature, and dissolved oxygen). The first round of monitoring (Round 1) was from 1999–2003, and sampled those indicators at each of 257 sites throughout the County (approximately 50–55 sites per year). Round 2 sampling (2010–2013) occurred for the same number of sites distributed throughout the County, but at different individual locations. Site locations were selected for each round using a stratified random process. Funding is in place for the next cycle which will be conducted from 2015–2017.

In addition, the County will monitor water quality to identify those stressors most likely causing degradation. The contaminants of most concern in the County are total nitrogen, total phosphorus, TSS, BOD, fecal coliform bacteria, and PCBs. These data will be collected using MDE-approved methods and laboratories. Both dry-weather and wet-weather water quality monitoring will be conducted. The County plans to work with MDE in identifying suitable locations for water quality monitoring.

Data from the monitoring program will be used to identify and rank water quality problems in the County's watersheds. The County is in the final stages of initiating a Public-Private-Partnership (P3) program. This program will be used to prioritize structural water quality improvement projects based on identified severity of impairments.

### *RESTORATION PLANS*

#### *WATERSHED PLANS*

In partnership with local, State and Federal agencies, the County completed the Anacostia River Watershed Plan in 2009. About 17% of the County, or 12 watersheds at the MD 12-digit scale, are located in the Anacostia. Watershed plans have also been drafted for the Piscataway Creek and Bear Branch watersheds, which cover an additional 14% of the County, or an additional 8 watersheds. Assessments have been completed for all targeted watersheds shown in Figure E2.

#### *IMPERVIOUS SURFACE AREA ASSESSMENT*

The GIS reconciliation during this reporting period has enabled the determination of the County's Impervious Restoration baseline. The base line represents 7,365 acres to be restored.

This was determined from the 10 percent and 20 percent impervious restoration requirements of the third and fourth generation NPDES permits, respectively.

The reconciled data can now be queried to determine restoration progress on an annual basis through the as-built year field. Using this method, to date 1,026 acres have already been restored in the County since the Surface Water Management Program inception.

*WATERSHED RESTORATION PLANNING*

The County's new MS4 permit requires that the County develop local watershed restoration plans by January 2nd, 2015, to address each U.S. Environmental Protection Agency (EPA) approved total maximum daily load (TMDL) with stormwater waste load allocations (WLA). Each stormwater WLA provides a numerical pollutant load limit that the water body of concern can receive from urban stormwater runoff and still meet its water quality standards. To address all TMDLs with stormwater WLAs that impact County water bodies, a total of six separate restoration plans are currently being developed. These six plans and the stormwater pollutants they address are given in Table E1.

*Plan Development*

The overall goals of the restoration plans are to:

- Improve watershed health, including hydrology, water quality, and habitat, using a balanced approach that minimizes negative impacts.
- Support compliance with regional, state, and federal regulatory requirements.
- Increase awareness and stewardship within the watershed, including encouraging policy makers to develop policies that support a healthy watershed.

Each plan listed in Table E1 will present an overall strategy to manage urban stormwater and limit the amount of pollutants reaching the County's water bodies. The plans will include a methodology to calculate pollutant load productions from different urban land types along with anticipated pollutant load reductions from a variety of restoration activities. Using an iterative approach, the plans will develop an optimal mix of restoration activities that are implemented to different levels of efforts to attain the necessary stormwater WLA across all County watersheds. Finally the plans will provide an implementation timeline that accounts for the estimated costs of implementing and maintaining restoration activities and the county's available funding sources. For each pollutant, the implementation timeline will estimate an end date for when its stormwater WLA is anticipated to be met assuming full implementation of restoration activities. Given the uniqueness of this effort, the plans will offer an adaptive management option to allow changes, as required, when more information about the effectiveness of implementation strategies of the restoration activities are better known.

| TABLE E1<br>PRINCE GEORGE'S COUNTY RESTORATION PLAN REPORTS | |
|---|---|
| **Report Plans 2014** | **Pollutants** |
| Restoration Plan for the Anacostia River Watershed | Nitrogen, Phosphorous, Sediment, BOD, Bacteria |
| Implementation Plan for the Anacostia River Watershed Trash TMDL | Trash |
| Restoration Plan for the Mattawoman Creek Watershed | Nitrogen, Phosphorus |
| Restoration Plan for the PCB-Impacted Water Bodies* | PCBs |
| Restoration Plan for the Piscataway Creek Watershed | Bacteria |
| Restoration Plan for the Upper Patuxent River and Rocky Gorge Reservoir Watersheds | Phosphorus, Sediment, Bacteria |

** PCB-impacted water bodies include County portions of Anacostia River, Mattawoman Creek, Piscataway Creek, and Potomac River.*

*Proposed Restoration Activities*

A variety of restoration activities will be proposed in the plans which will include both on-the-ground best management practices (BMP) and programmatic initiatives. On-the-ground BMP practices include Environmental Site Design (ESD) practices such as permeable pavements, disconnection of rooftop runoff, and micro-bioretention, and structural BMPs such as infiltration practices and wet ponds. On-the-ground BMP projects will consist of both retrofits of older stormwater management facilities for better removal of pollutants and installation of new facilities. Various programs exist in the County that will be utilized to install BMPs on both public and private lands. Some of these programs are: the Stormwater Management Program, Public-Private-Partnership (P3) program, Rain Check Rebate Program, countywide Green/Complete Streets program, Alternative Compliance Program, and the Transforming Neighborhoods Initiative.

Programmatic initiatives will consist of enhancing programs to promote tree planting, domestic and urban animal control, pet waste pickup, and residential/commercial lawn care education amongst other programs. These will involve an expanded public outreach campaign to inform the public of ways they can contribute to the restoration of the local watersheds. The County will initiate and strengthen various County programs to support these initiatives.

The key revenue sources that will provide funding for the restoration programs are from the County's Capital Improvements Program (CIP), the stormwater ad valorem tax, and the Clean Water Act Fee. In addition to these, grants from federal, state, and other sources will be pursued and are expected to be an essential contribution for funding of restoration activities.

***PUBLIC PARTICIPATION***

In mid-July, 2014, two public meeting will be held during the initial development phase of the restoration plans. They will broadly present the County's vision and method to develop the plans. The draft restoration plans are expected to be finalized by end of October 2014. At that time the plans will be posted online for public review and comment. Furthermore additional public meeting will be held to inform the public on the restoration efforts by the County to address all local TMDLs that have a stormwater WLA. The County will finalize all plans and submit them to MDE for review and approval no later than January 2, 2015 as required by it's the County's MS4 permit.

Looking forward DoE is partnering with the CBT to leverage CBT's experience and expertise with public education and outreach, administration and operation of grant-funded stormwater management water quality improvement projects, and dedicated resources for applicant guidance and support on applications, BMP selection and installation practices. DoE looks to guide CBT efforts to increase program participation through continued emphasis on residential property owners and focused outreach and participation with our commercial, industrial, municipal, and non-profit property owners. DoE will also evaluate Rain Check Rebate integration opportunities with the Public Private Partnership (P3) contract. Opportunities may include communitywide outreach to install eligible rebate practices, perform energy audits, and install green energy practices (i.e., solar systems) and maintenance operations.

Additionally, DoE is partnering with the Low Impact Design Center to implement a Contractors Certification Program. The program will provide opportunity for professional landscapers and other green businesses to attend and complete a non-credit training program in non-structural BMP selection, installation, and maintenance practices. DoE is working with the Low Impact Design Center and Prince George's County Community College to implement the course during the fall of 2014. This program will provide a list of "qualified contractors" to property owners looking for services under the *Rain Check Rebate Program*, at the same time supporting the County's Jobs First Act in developing and promoting local business development and job growth.

To enhance the program, promote increased participation, and expanded opportunities to community oriented projects, DoE is considering the following program enhancements:

- Increased rebate rates (promote stronger incentive for higher cost/higher yield practices such as pavement removal, and permeable pavement installation);
- Increased residential rebate ceilings (promote multiple single property project installations); and
- Allow "common area" properties (homeowner and civic associations to participate with Rebate Program) to take advantage of larger scale treatment opportunities. DoE will work with Council on legislative amendments as necessary to implement recommended revisions.

### *TMDL COMPLIANCE*

The County will prepare annual TMDL assessment reports starting in year 2015, upon completion of the watershed TMDL restoration plans that will be finalized by January 2, 2015. With each annual report, the County will report progress towards meeting its MS4 WLAs by describing how it measured the effectiveness of the restoration program. The annual report will include the estimated net change in pollutant load reductions from all completed structural and nonstructural water quality improvement projects and enhanced stormwater management programs. Estimated load reductions will be calculated in a manner that is consistent with the loads used in the restoration plan. The report will also compare load reductions and costs to benchmarks and milestones, revised cost estimates, and plans for increasing implementation or activities if benchmarks and milestones are not being met. Therefore, the County will be able to determine if it is meeting its restoration goals and, if not, adjust its program accordingly.

#### *RAIN CHECK REBATE PROGRAM*

Since Prince George's County initiated the *Rain Check Rebate Program* back in 2013, the program has flourish and become a great incentive for County property owners interested in

installing approved stormwater management practices on their properties. Many of the property owners in this County are interested in helping to minimize stormwater runoff and prevent stormwater pollution in our waterways, but lacked the funding to install BMP practices on their property to help with stormwater runoff and stormwater pollution. The program provides eligible applicants the opportunity to receive rebates for installing approved stormwater management practices. Homeowners, businesses, and nonprofit entities (including housing cooperatives and faith-based institutions) can recoup some of the costs of installing practices covered by the program. To ensure the continued success of this program, public outreach events are conducted to promote the adoption of endorsed stormwater management practices and gain maximum participation by the property owners in the County. Another incentive for property owners to participate in the Rain Check Rebate Program is they are eligible for a fee reduction credit on the Clean Water Act Fee located on their tax bill for installing stormwater management practices on their property. Figure E3 identifies the overall performance of the program in 2014. Additional materials are provided on DVD, Restoration Plans and TMDL.

DoE has partnered with the CBT to leverage CBT's experience and expertise with public education and outreach, administration and operation of grant-funded stormwater management water quality improvement projects, and dedicated resources for applicant guidance and support on applications, BMP selection and installation practices. CBT will begin administering these functions starting July of 2014 (FY 2015). DoE looks to guide CBT efforts to increase program participation through continued emphasis on residential property owners and focused outreach and participation with our commercial, industrial, municipal, and non-profit property owners.

DoE is also partnering with the Low Impact Design Center to implement a Contractors Certification Program. The program will provide opportunity for professional landscapers and other green businesses to attend and complete a non-credit training program in non-structural BMP selection, installation, and maintenance practices. DoE is working with the Low Impact Design Center and Prince George's County Community College to implement the course during the fall semester of 2014. This program will provide a list of "qualified contractors" to property owners looking for services under the *Rain Check Rebate Program*, at the same time supporting the County's Jobs First Act in developing and promoting local business development and job growth. After the completion of the Contractors Certification course, DoE will evaluate the course for any necessary improvements that may be needed from the feedback of participates in the class and from the Low Impact Design Center. DoE plans to continue offering this course at Prince George's County Community College after the 2014 fall semester.

DoE is currently proposing written legislation amendments to the Rain Check Rebate Program. DoE plans to submit these amendments to County Council in the Fall of 2014. The legislation amendments proposes rebate rates be increased and residential rebate ceilings be increased to promote increased participation.

**FIGURE E1**
**MAJOR WATERSHEDS**

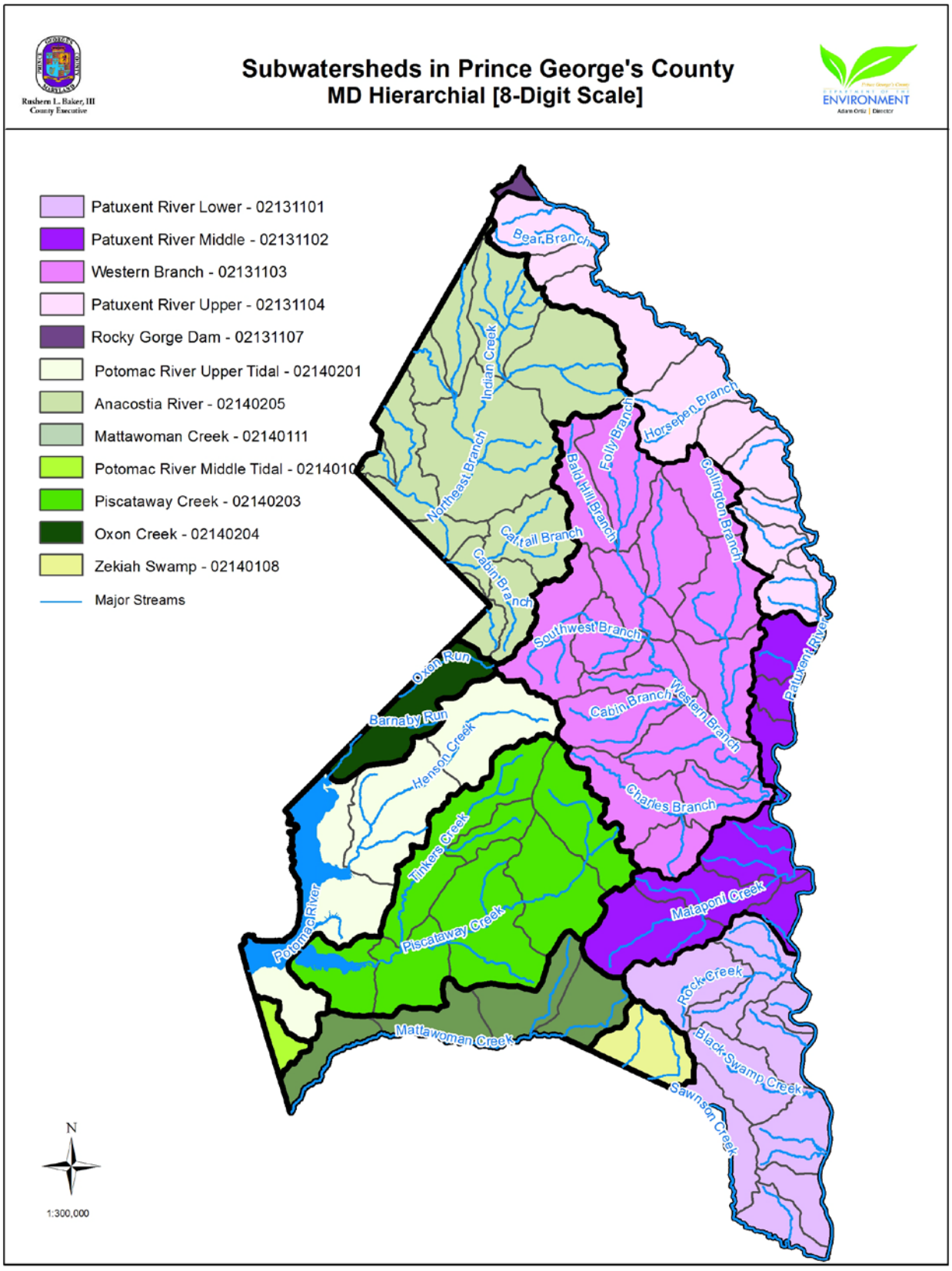


**FIGURE E2**
**TARGETED WATERSHED RESTORATION PLANNING**

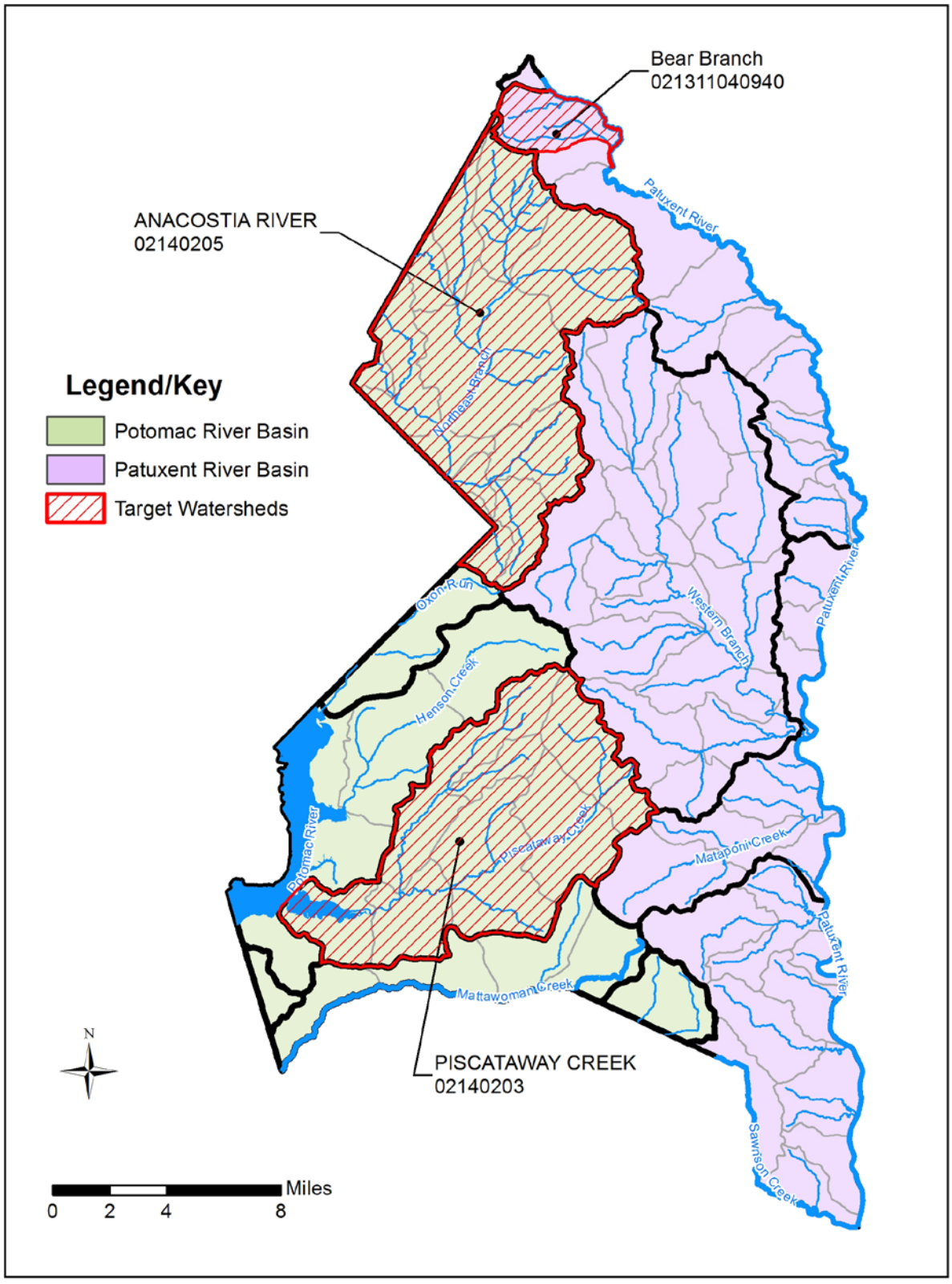


**FIGURE E3**
**RAIN CHECK REBATE PERFORMANCE**

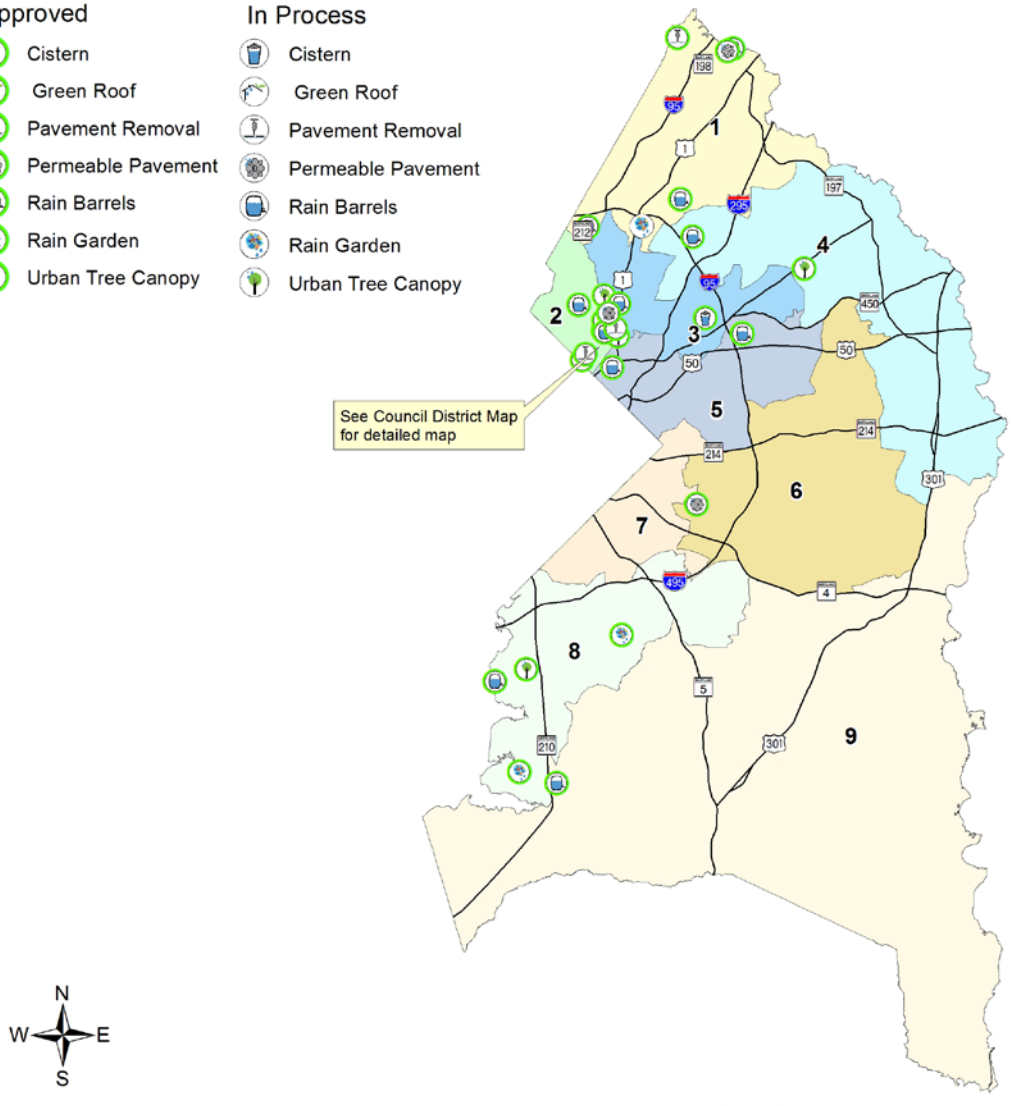
Rushern L. Baker, III
County Executive

## January - June 2014 Rain Check Rebate Program
## Program Performance Summary

| | COUNTY TOTALS | Breakout by District | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Dist. 1 | Dist. 2 | Dist. 3 | Dist. 4 | Dist. 5 | Dist. 6 | Dist. 7 | Dist. 8 | Dist. 9 |
| Total Number Applications Received | 23 | 3 | 4 | 1 | 7 | 3 | 0 | 1 | 3 | 1 |
| Total Number Applications Denied | 8 | 1 | $0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 |
| Total Number Applications Approved | 15 | 2 | 4 | 1 | 1 | 3 | 0 | 0 | 3 | 1 |
| Total Amount of Rebate Approved | $5,099 | $100 | $1,520 | $300 | $150 | $2,050 | n/a | n/a | $929 | $50 |

**Approved**
- Cistern
- Green Roof
- Pavement Removal
- Permeable Pavement
- Rain Barrels
- Rain Garden
- Urban Tree Canopy

**In Process**
- Cistern
- Green Roof
- Pavement Removal
- Permeable Pavement
- Rain Barrels
- Rain Garden
- Urban Tree Canopy



*ALTERNATIVE COMPLIANCE PROGRAM*

Alternative Compliance is a unique partnership between Prince George's County and qualified tax-exempt religious organizations or other 501(c) nonprofit organizations to improve water quality in the County's waterways by reducing and treating stormwater runoff. Nonprofits who participate in Alternative Compliance are eligible to receive a reduction in their Clean Water Act Fee by choosing one or more of the following options:

- Option 1: Provide Easements – 50% reduction in impervious area fee.Nonprofit provides a right of entry agreement for the County to install stormwater best management practices (e.g., rain gardens) on property owned by the organization.
- Option 2: Outreach and Education – 25% reduction in impervious area fee.Nonprofit assists the County with their Rain Check Rebates outreach and education campaign to raise awareness of water quality issues among property owners. In addition, the nonprofit agrees to create an environmental "green team" for the purpose of applying green practices on the organization's property.
- Option 3: Green Care and Good Housekeeping – 25% reduction in impervious area fee. Property owner agrees to use "green" lawn management companies that are certified in the proper use and application of fertilizers for the protection of water quality.

A total of 750 Acres of impervious area is available and can be treated though the alternative compliance program.

*PRIVATE PUBLIC PARTNERSHIP*

The County is in the middle of negotiations for a P3 to work on restoration projects on County right-of-ways and other suitable land, this includes restoration of 2,000 impervious acres. Contract negotiations are expected to continue into 2015.

*COUNTYWIDE GREEN/COMPLETE STREETS PROGRAM*

DPW&T initiated a Countywide Green/Complete Streets Program during the 2011 reporting year as a strategy for addressing mounting MS4 and TMDL treatment requirements. The program seeks out opportunities to incorporate stormwater control measures, environmental enhancements, and community amenities within the DPW&T Capital Improvement Projects. The types of enhancements that are being evaluated include low impact design, tree shading, ESD in the right-of-way, energy efficient lighting, and the utilization of recycled materials. The County is developing a document that allows for green infrastructure incorporation into street retrofits and newly designed roadways. The document proposes techniques for a "road diet," including reducing the right-of-way width and existing impervious surfaces, roadway grade changes to allow center flow to medians, and BMPs to improve water quality.

An evaluation of the County's standard roadway cross-sections and details was also conducted to identify where existing roadway standards could be modified. DPW&T has initiated the process of examining where the Standard Street Section and Standard Details need revision and updating to increase the opportunity for water quality BMP incorporation within the right-of-way. A scoping meeting was held in July with representatives from DPW&T, DoE, and DPIE. Concurrently, DPIE is spearheading a committee to determine how new development can manage the stormwater generated from roadway areas within the right-of -way and remove impediments.

The first Green/Complete Street project to be constructed is the Ager Road project. This project will use vegetated swales (bio-swales and bio-filtration), inlet filtration devices, modular wetlands, outfall protection, and stream restoration within the right-of-way to address TMDL load reductions. In addition to the green components of the project, the design incorporates linked pathways for pedestrians, bus shelters, street furniture, light-emitting diode (LED) lighting, and integrated bike lanes, making this a true Green/Complete Street. DPW&T's OEPM has incorporated Green/Complete Street design elements into additional highway and bridge projects. A spreadsheet of Green/Complete Streets currently in various stages of development is provided on DVD, Restoration Plans and TMDL.

The Green/Complete Street projects are implemented as retrofits to existing roadways and present a multitude of challenges. Typically, retrofitting existing roadways requires utility and infrastructure relocation, citizen involvement and perception, and regulatory compliance. Due to the complexity of a typical green/complete street project, the projected timeframe for completion from inception to construction may take 5 years.

Wherever feasible, projects will incorporate new SWM BMPs to provide treatment for legacy roadways when roadway maintenance includes major reconstruction. During the reporting year, the County Council adopted a bill (CB-83-2012), requiring all County projects to address water quality control.

### *WATERSHED RESTORATION CAPITAL PROJECTS*

The Capital Projects Design (CPDS) and Capital Projects Construction (CPCS) Sections manage capital projects to meet local priorities and community needs. Project types may include flood abatement and storm drainage relief, stream restoration, grants, community revitalization, as well as watershed restoration to treat impervious surfaces, the benchmark by which the County's watershed restoration program is evaluated. Balancing project delivery to meet local priorities with the rigorous regulatory requirements mandated by the County's MS4 Permit is a formidable challenge. The County's watershed restoration approach is designed to meet local priorities and regulatory requirements, and this will be achieved through a concerted effort of funding, restoration opportunity, and BMP applicability and efficiency. Tables E3 through E5 summarize the 2014 (January 1, 2014 through June 30, 2014) status of the watershed restoration projects in planning, design, or under construction. Table E6 summarizes the watershed restoration projects that were completed during this reporting year with Table E7 providing an overall summary of capital improvement restoration projects. Table E2 summarizes projects which were evaluated and dropped during planning or design phases. A geodatabase of capital improvement restoration projects is provided on DVD, Restoration Plans and TMDL.

| TABLE E2<br>2014 WATERSHED RESTORATION PROJECTS – DROPPED | | | | | |
|---|---|---|---|---|---|
| **Watershed** | **Project Name** | **Project Type** | **BMP Type** | **I. A.* / Acres** | **Cost / K**** |
| 021402050825 | Anacostia Restoration IC-M-01-S-2B (RKK) | New BMP | Bioretention and Impervious Area Removal | 3.0 | 179 |
| 021402050824 | Anacostia Restoration IC-U-01-S-30 (RKK) | New BMP | Bioswale | 2.5 | 53 |
| 021311030929 | Greentec Pond Retrofit | BMP Retrofit | Retention Pond (Wet Pond) | 10.0 | 467 |
| 021311040940 | Laurel Employment Park SWM Pond Retrofit | BMP Retrofit | Extended Detention | 28.58 | 6 |
| | | | **SUMMARY** | 44.08 | 705 |

**I.A. (impervious acres treated by bmp).*
***K (cost in thousands of dollars) Cost estimates the total cost for each BMP (planning, design and construction).*

| TABLE E3<br>2014 WATERSHED RESTORATION PROJECTS – PLANNING | | | | | |
|---|---|---|---|---|---|
| **Watershed** | **Project Name** | **Project Type** | **BMP Type** | **I. A.* / Acres** | **Cost / K**** |
| 021311040940 | Bear Branch Stream Restoration Phase II | New BMP | Stream Restoration of Hospital Branch 450LF Restoration | 4.5[1] | 1,800 |
| 021402050818 | Arundel Road Green Street Project | New BMP | Stormwater Management Facilities | 0.4 | TBD |
| 021402010797 | New Redeemer Forestville Baptist Church | New BMP | Bioretention Infiltration Trench Bioswale | 0.9 | 245 |
| | | | **SUMMARY** | 5.8 | 2,045[2] |

**I.A. (impervious acres treated by bmp).*
***K (cost in thousands of dollars) Cost estimates the total cost for each BMP (planning, design and construction).*
*[1] Treatment credit for stream restoration assumes100 l. f. =1.0 I.A. restored (MDE's Accounting for Stormwater Load Allocations and Impervious Acres Treated, June 2012.*
*[2] The Cost summarized for projects in planning is an underestimate – as a cost estimate has not been determined for all BMPs.*

| TABLE E4<br>2014 WATERSHED RESTORATION PROJECTS – DESIGN | | | | | |
|---|---|---|---|---|---|
| **Watershed** | **Project Name** | **Project Type** | **BMP Type** | **I. A.* / Acres** | **Cost / K**** |
| 021402030801 | West Boniwood Turn | New BMP | Stream Restoration: 300 LF | 3.0[1] | 513 |
| 021402050816 | Beaverdam 20 | New BMP | Stream Restoration: 620 LF & Upland Retrofit | 6.2 | 1,087 |
| 021402010796 | Tucker Road | New BMP | Stream Stabilization: 220 LF | 2.2[1] | 220 |
| 021402030800 | Tinkers Creek Infiltration Basin with Underdrains | BMP Retrofit | SWM Pond | 6.6 | TBD |
| 021402050818 | University Boulevard (MD 193) Green Street LID Stormwater Retrofit | BMP Retrofit | LID Stormwater | 7.9 | 3,551 |
| 021311040921 | Pyles Drive I | New BMP | Stream Stabilization: 800 LF | 8.0[1] | 686 |
| 021311040940 | Kenny Road | New BMP | Stream & Slope Stabilization: 125 LF | 1.3[1] | 420 |
| 021402050816 | Pennsy Drive | New BMP | Bioretention | 1.5 | 278 |
| 021402010797 | Regency Village | New BMP | Stream Restoration: 140 LF | 1.4[1] | 194 |
| 021402030799 | Taylor Avenue | New BMP | Stream & Slope Stabilization: 500 LF | 5.0[1] | 1,680 |
| 021402050822 | Fordham Street Drainage Channel Stabilization | New BMP | Stream Stabilization: 200 LF & Constructed Wetland | 2.0[1] | 597 |
| 021402050822 | Lower Northwest Branch Phase I: Nutrient & Sediment Reduction | New BMP | Stream Restoration: 6,336 LF | 63.4[1] | 402 |

| TABLE E4, CONTINUED<br>2014 WATERSHED RESTORATION PROJECTS – DESIGN | | | | | |
|---|---|---|---|---|---|
| **Watershed** | **Project Name** | **Project Type** | **BMP Type** | **I. A.* / Acres** | **Cost / K**** |
| 021402050816 | Washington Commerce Center SWMF Retrofit | BMP Retrofit | ED with Constructed Wetland | 64.0 | 948 |
| 021402050816 | Metroview Pond Retrofit | BMP Retrofit | SWM Retrofit with Constructed Wetland | 41.5 | 729 |
| 021402030800 | Tinkers Creek Submerged Gravel Wetland<br>Piscataway Study ID No.C-6 | BMP Retrofit | ED Wetland | 6.6 | 404 |
| 021402030802 | Pea Hill Branch SWM Retrofit<br>Piscataway Study ID No. R-3 | BMP Retrofit | ED Wetland | 5.2 | 259 |
| 021402010797 | Yorkville Road Site Grading and Restoration | New BMP | Impervious Acreage Removal and Stream & Slope Stabilization:<br>450 LF | 4.5 | 749 |
| 021402050811 | London Wood Pond Retrofit | BMP Retrofit | Retention Pond<br>(Wet Pond) | 19.8 | 287 |
| 021402050816 | Spectrum 95 Pond Retrofit | BMP Retrofit | Retention Pond<br>(Wet Pond) | 14.8 | 686 |
| 021402050822 | Berwyn Heights Pond Project<br>ARP ID No. IC-01-S-23A | New BMP | Flow Splitter to Wet Pond | 18.3 | 578 |
| 021402030800 | Friendly High School BioR No.1<br>Piscataway Study ID No. S-9 | New BMP | Bioretention | 1.6 | 291 |
| | Friendly High School BioR No.2<br>Piscataway Study ID No. S-9 | New BMP | Bioretention | 0.6 | |
| | Friendly High School BioR No.3<br>Piscataway Study ID No. S-9 | New BMP | Bioretention | 0.2 | |
| | Friendly High School BioR No.4<br>Piscataway Study ID No. S-9 | New BMP | Bioretention | 0.1 | |
| 021402030800 | Temple Hill Stream Restoration | New BMP | Stream Stabilization:<br>1100 LF | 11.0[1] | 617 |
| 021311030919 | Brown Station Road LID Demonstration Project | New BMP | Rain Garden, Bioretention, Permeable Pavers | 0.32 | 64 |
| 021402050811 | Onslow Way | New BMP | Stream Stabilization | TBD | 363 |
| 021402050825 | Center Park Pond Retrofit | New BMP | Retention Pond<br>(Wet Pond) | 14.9 | 617 |

| TABLE E4, CONTINUED<br>2014 WATERSHED RESTORATION PROJECTS – DESIGN | | | | | |
|---|---|---|---|---|---|
| **Watershed** | **Project Name** | **Project Type** | **BMP Type** | **I. A.* / Acres** | **Cost / K**** |
| 021402030804 | Holloway Estates Pond Retrofit | New BMP | Retention Pond (Wet Pond) | 12.9 | 215 |
| 021311030923 | Collington Center - Pond #1 | BMP Retrofit | Extended Detention Structure, Wet | 170 | 1,200 |
| 021311030920 | Collington Center - Pond #2 | BMP Retrofit | Retention Pond (Wet Pond) | 56 | 1,205 |
| 021402040805 | Owen Road Stream Bank Stabilization 600 LF Stream Stabilization | New BMP | Stream Stabilization | 6.0[1] | TBD |
| 021311040937 | Springfield Manor #1 NPDES Pond Retrofit | BMP Retrofit | Wet Pond | 49.80 | 1,204 |
| 021311040937 | Springfield Manor #2 NPDESPond Retrofit | BMP Retrofit | Wet Pond | 22.6 | 1,598 |
| 021311040940 | Laurel Lakes Sediment Removal | New BMP | Dredging | 284 | 389 |
| 021402050816 | 73rd Avenue Green Street Project (BioR No. 1) | New BMP | Bioretention | 1.5 | 338 |
| | 73rd Avenue Green Street Project (BioR No. 2) | New BMP | Bioretention | 0.7 | |
| | 73rd Avenue Green Street Project (BioR No. 3) | New BMP | Bioretention | 0.3 | |
| | 73rd Avenue Green Street Project (BioR No. 4) | New BMP | Bioretention | 0.2 | |
| 021402050816 | Cattail Branch Wetland Project No. 1 RKK ID No. 102 | New BMP | Submerged Gravel Wetland | 7.0 | 478 |
| | Cattail Branch Wetland Project No. 2 RKK ID No. 102 | New BMP | Submerged Gravel Wetland | 5.4 | |
| | | | **SUMMARY** | **928.32** | **22,847**[2] |

**I.A. (impervious acres treated by bmp).*

***K (cost in thousands of dollars) Cost estimates the total cost for each BMP (planning, design and construction).*

[1] *Treatment credit for stream restoration assumes100 l. f. =1.0 I.A. restored (MDE's Accounting for Stormwater Load Allocations and Impervious Acres Treated, June 2012.*

[2] *The Cost summarized for projects in design is an underestimate – as a cost estimate has not been determined for all BMPs.*

| TABLE E5<br>2014 WATERSHED RESTORATION PROJECTS – UNDER CONSTRUCTION | | | | | |
|---|---|---|---|---|---|
| **Watershed** | **Project Name** | **Project Type** | **BMP Type** | **I. A.* / Acres** | **Cost / K**** |
| 021402050822 | Paint Branch Stream Restoration (Phase II) | New BMP | Stream Restoration: 1,400 LF ACOE | 14.0[1] | 1,200 |
| 021402050816 | Barlowe Police Station Bioretention 1 | New BMP | Bioretention | 0.5[3] | 278 |
| | Barlowe Police Station Bioretention 2 | New BMP | Bioretention | 0.9[3] | |
| | Barlowe Police Station Permeable Pavers | New BMP | Permeable Pavers | 0.9[3] | |
| | | | **SUMMARY** | **14.0** | **1,478** |

**I.A. (impervious acres treated by bmp).*
***K (cost in thousands of dollars) Cost estimates the total cost for each BMP (planning, design and construction).*
[1]*Treatment credit for stream restoration assumes100 l. f. =1.0 I.A. restored (MDE's Accounting for Stormwater Load Allocations and Impervious Acres Treated, June 2012.*
[3] *Impervious area credit not applicable due to EPA Administrative Consent Order.*

| TABLE E6<br>2014 WATERSHED RESTORATION PROJECTS – COMPLETE | | | | | |
|---|---|---|---|---|---|
| **Watershed** | **Project Name** | **Project Type** | **BMP Type** | **I. A.*/ Acres** | **Cost/ K**** |
| 021402010797 | Leona Street | New BMP | Bioretention | 0.5 | 176 |
| | | | **SUMMARY** | **0.5** | **176** |

**I.A. (impervious acres) treated by bmp.*
***K (cost in thousands of dollars) Cost estimates the total cost for each BMP (planning, design and construction).*

| TABLE E7<br>2012 WATERSHED RESTORATION PROJECT STATUS SUMMARY | | | |
|---|---|---|---|
| **Project Phase** | **Number of BMPs** | **Impervious Area/ Acres*** | **Cost/Thousands**** |
| Dropped | 4 | 44.08 | 705 |
| Planning | 3 | 5.81 | 2,045 |
| Design | 41 | 928.32 | 22,847 |
| Construction | 4 | 14.0 | 1,478 |
| Completed | 1 | 0.5 | 176 |
| **TOTAL** | **53** | **992.7** | **27,251**[1] |

**Impervious acreage treatment credit.*

***Cost includes planning, design and construction costs.*

[1]*Cost is an underestimate, as a cost estimate has not been determined for all projects.*

# F. ASSESSMENT OF CONTROLS

## 1. WATERSHED RESTORATION ASSESSMENT

The Prince Georges County's (The County hereafter) NPDEs MS4 permit has been renewed, which became effective January 2, 2014. A letter dated July 16, 2014, issued by Maryland Department of Environment (MDE) required that the reporting period should be synchronized with the State's fiscal year of July 1st through June 30th. For this year's reporting, the MDE required the County to submit data for January 1, 2014, through June 30, 2014, only.

In previous years, the data submitted to MDE for Bear and Black Branch represented the time period of October through September with the data collection schedule as displayed in Table F1 below. The table also presents the same data collection schedule with the new reporting requirements. Per the revised reporting schedule, this report excludes the physical sampling at both Bear and Black Branch as these sampling are done in August and September months, hence, were already presented in the previous year's report. This report includes Chemical data for October 2013 through December 2013 since previous year's report excluded this data. In addition, the Chemical data for August 2014 through October 2014 are also included in this report simply because the statistical analysis for the entire previous reporting period (October 2013 to September 2014) was already completed before the preparation of this report.

**TABLE F1**
**PREVIOUS AND REVISED DATA COLLECTION AND REPORTING SCHEDULE**

| Data Collection and Reporting Schedule (Previous Year) | | | | Revised Data Collection and Reporting Schedule | | | |
|---|---|---|---|---|---|---|---|
| **Months** | **Chemical*** | **Physical** | **Biological*** | **Months** | **Chemical*** | **Physical** | **Biological*** |
| October | At least 2 samples | | | July | At least 2 samples | | |
| November | | | | August | | Annual sampling | |
| December | | | | September | | | |
| January | At least 2 samples | | | October | At least 2 samples | | |
| February | | | | November | | | |
| March | | | Annual sampling | December | | | |
| April | At least 2 samples | | | January | At least 2 samples | | |
| May | | | | February | | | |
| June | | | | March | | | Annual sampling |
| July | At least 2 samples | | | April | At least 2 samples | | |
| August | | Annual sampling | | May | | | |
| September | | | | June | | | |

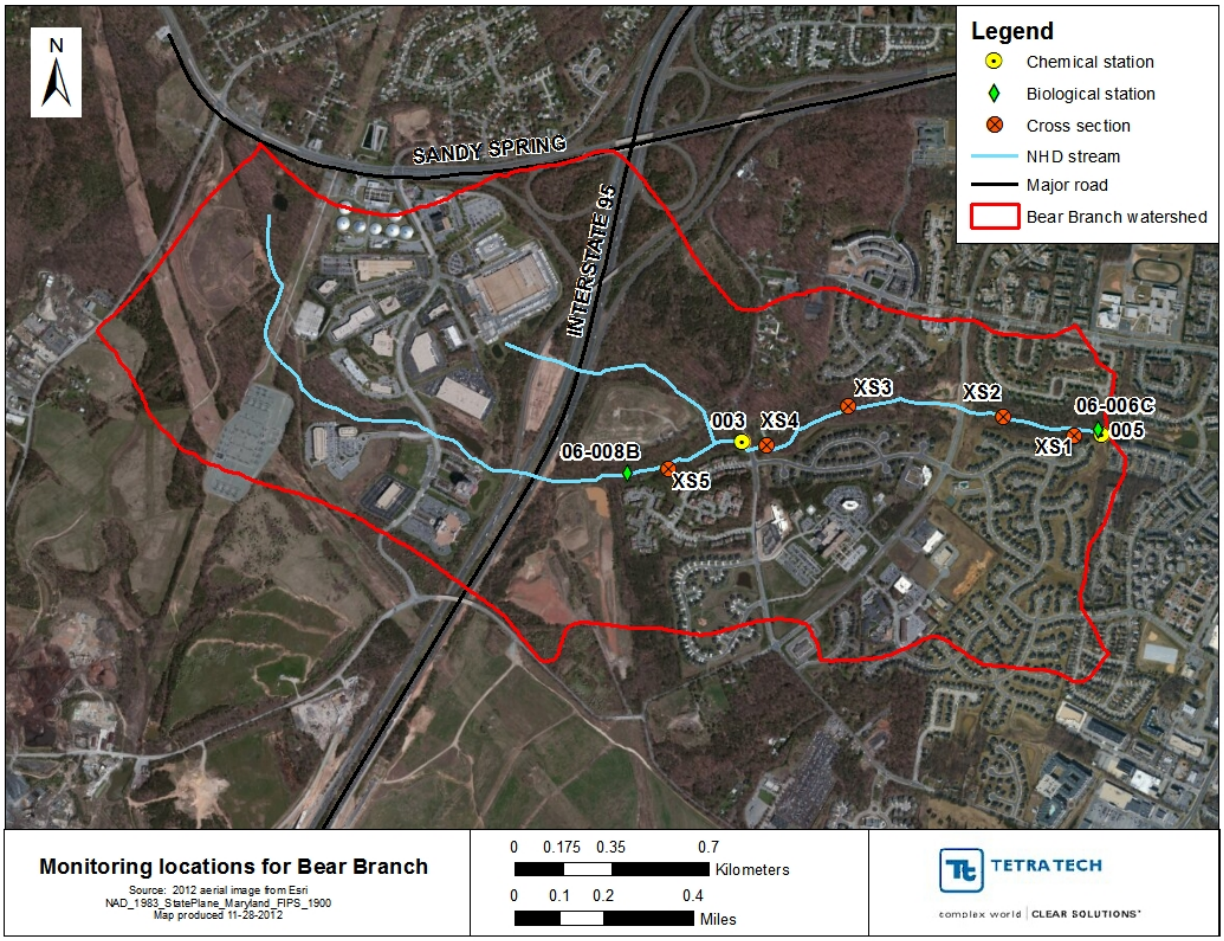
**Sampling at Bear Branch only.*

During this monitoring year, the County addresses the comments issued by MDE dated July 16, 2014, on 2012 Annual Report regarding the Storm Water Management (SWM) assessment on Black Branch Watershed. The County has conducted an analysis of BMP performance as it relates to the watershed build out activities. The report of this analysis is provided in a different document titled "Response to MDE Comments on Black Branch Watershed 2012 Annual Report: Stormwater Management Assessment". A hard copy of this document is provided on DVD, Assessment of Controls.

### *BEAR BRANCH*

In June 2007, the County began a monitoring program in the Bear Branch watershed to assess the effectiveness of restoration projects planned for this watershed. As proposed in our correspondence dated April 2, 2007, the County relocated the two monitoring stations from the Beaverdam Creek watershed to the Bear Branch watershed, upstream of Laurel Lakes. The locations of the chemical, biological and physical monitoring stations are shown in Figure F1. A full analysis of the monitoring protocol and results are provided in the Bear Branch monitoring report, *Prince George's County, Maryland—Long-Term Stormwater Monitoring Program — Bear Branch Annual Report 2014*, included on DVD, Assessment of Controls/Bear Branch.

**FIGURE F1**
**BEAR BRANCH MONITORING LOCATIONS**



*CHEMICAL MONITORING*

Two automated monitoring stations were installed in Bear Branch to collect water quality and flow data. Physical and chemical monitoring started in June 2007, at stations 003 and 005 (Table F2). The data will be used to establish the baseline condition for the water quality parameters required under the County's NPDES MS4 Permit.

**TABLE F2**
**AUTOMATED SAMPLER LOCATION AND DRAINAGE AREA – BEAR BRANCH SUBWATERSHED**

| Station | Station Type | Location | Drainage Area (acres) | Latitude | Longitude |
|---|---|---|---|---|---|
| 003 | In-stream | East of Contee Road | 659 | 39.09023 | -76.88478 |
| 005 | In-stream | 200 feet behind the end of Chapel Cove Drive | 1,089 | 39.09044 | -76.86980 |

During the data collection period from October 2013 to September 2014, 126 samples were collected and analyzed to represent both wet- and dry-weather conditions. For chemical data, several wet-weather observations are above the water quality criteria for the total copper (Cu), total lead (Pb), total zinc (Zn), total Kjeldahl nitrogen (TKN), nitrate+nitrite ($NO_3$+$NO_2$), total phosphorus (TP), and *Escherichia coli* (*E. coli*). Several dry - weather observations were also above the water quality criteria for Pb, TKN, NO3/NO2, TP, and E. coli. Table F3 identifies the EPA and MDE water quality criteria for the parameters analyzed in the study.

Two trend approaches were used to evaluate pollutants loading during the sampling period (2007–2014), a linear regression method and simple Mann-Kendall non-parametric trend statistical analysis. While 8 years of data are insufficient to fully evaluate and understand the processes occurring in this watershed, some preliminary conclusions can be made. The statistical analysis of data indicates a significant increasing trend for TP at both stations 003 and 005. TSS at station 005 exhibits an increasing trend in the statistical analysis, but not regression.

The paired analysis of water quality at station 003 and station 005 suggest a significant difference in stormflow TSS EMC values between the two sites, with a higher concentration at station 005. However it is important to note that stormflow TSS EMCs have been highly variable since sampling began in 2007. Significant differences in TSS values were observed during several storm events that occurred between 2010 and 2013. This time period coincided with the construction of the stream restoration project located between station 003 and station 005. As a result the sediment source could be land disturbance associated with construction. Continuing the paired analysis of TSS will be critical in determining whether the sediment is due to the eroding stream channel and whether the stream restoration project will reduce sediment load. No significant differences were noted for TKN or $NO_3$/$NO_2$ between the two monitoring stations in either stormflow or baseflow.

Please refer to the Bear Branch monitoring report, Section 4 beginning on page 15, for a detailed summary of the chemical monitoring results, including the Event Mean Concentration (EMC) calculated from the sampling data and the estimated pollutant loadings to the Bear Branch watershed. Table F4 shows a pollutant load comparison for the past 8 monitoring years. The chemical monitoring database for the 2013-2014 monitoring year is included on DVD, Assessment of Controls/Chemical Monitoring Data.

**TABLE F3**
**EPA AND MDE CRITERIA FOR WATER QUALITY**

| Parameter | | | Source |
|---|---|---|---|
| Freshwater Metals[a] | Chronic | Acute | |
| Copper (µg/L) | 3.0 – 13.9 | 3.9–21.8 | National Recommended Water Quality Criteria (USEPA 2009b)[b] |
| | 9.1–20 | 13.1–28.9 | Maryland Numerical Criteria for Toxic Substances in Surface Waters (Maryland 2013a) |
| Lead (µg/L) | 0.57–5.8 | 14.7–148.5 | National Recommended Water Quality Criteria (USEPA 2009b) |
| | 2.7–3.3 | 71– 86 | Maryland Numerical Criteria for Toxic Substances in Surface Waters (Maryland 2013a) |
| Zinc (µg/L) | 38–178 | 38 – 178 | National Recommended Water Quality Criteria (USEPA 2009b) |
| | 122–295 | 122 – 295 | Maryland Numerical Criteria for Toxic Substances in Surface Waters (Maryland 2013a) |
| Human health for the consumption of | Water + organism | Organism only | |
| $NO_3/NO_2$ (mg/L) | 10 | -- | National Recommended Water Quality Criteria (USEPA 2009b) |
| Phenol (mg/L) | 10[c] | 860[c] | National Recommended Water Quality Criteria (USEPA 2009b)<br>Maryland Numerical Criteria for Toxic Substances in Surface Waters (Maryland 2013a) |
| Other | | | |
| *E. Coli* (MPN/100 mL) | 576[d] | | Quality Criteria for Water 1986 (USEPA 1986)<br>Maryland Water Quality Criteria Specific to Designated Uses (Maryland 2013b) |
| $NO_3/NO_2$ (mg/L) | 0.125 | | Ecoregion-Specific Recommended Nutrient Criteria, Region IX (USEPA 2000) |
| TKN (mg/L) | 0.3 | | Ecoregion-Specific Recommended Nutrient Criteria, Region IX (USEPA 2000) |
| TP (µg/L) | 36.56 | | Ecoregion-Specific Recommended Nutrient Criteria, Region IX (USEPA 2000, 2011) |

*Notes*:

[a] *Water quality standards for copper, lead, and zinc can vary by the hardness (EPA) and TSS (MDE) for each sample; therefore, a range is given (USEPA 2009b and Maryland 2013a).*

[b] *EPA has moved to a biotic ligand model that uses temperature, pH, dissolved organic carbon, calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity to determine the freshwater copper criteria (USEPA 2007). However, the equations for using just hardness were given, and thus used in this report.*

[c] *EPA has drafted new phenol criteria: 2 mg/L for water+organism and 100 mg/L for organisms only.*

[d] *This value is for Infrequent Full-Body Contact Recreation. The steady-state geometric mean indicator criterion is 126 MPN/100 mL, and per USEPA (1986), the geometric mean criteria should be compared to no less than five samples equally spaced in a 30-day period. Criteria are also available for other degrees of body contact; however, given the depth and setting of the monitoring locations, it was determined that the infrequent criteria would apply.*

**TABLE F4**
**COMPARISON OF LOADS (LBS/ACRE) PER MONITORING YEAR**

| Parameter | Year | Cu | Pb | Zn | TP | $NO_3\backslash NO_2$ | TKN | $BOD_5$ | TSS |
|---|---|---|---|---|---|---|---|---|---|
| Station 003 | | | | | | | | | |
| Annual stormflow[a b] Load | 2007–2008 | 0.032 | 0.0118 | 0.189 | 3.288 | 0.94 | 1.97 | 8 | 174.3 |
| | 2008–2009 | 0.0282[c] | 0.0230[c] | 0.114[c] | 0.321[c] | na[d] | 4.71[c e] | 20.1[c] | 248.5[c] |
| | 2009–2010 | 0.0108 | 0.0336[f] | 0.08 | 0.187 | 0.88[g] | 3.89 | 22.4 | 265.8 |
| | 2010–2011 | 0.0057 | 0.0046 | 0.0334 | 0.074 | 0.243 | 1.6 | 33.6 | 128.3 |
| | 2011–2012 | 0.0121[h] | 0.0075[h] | 0.072[h] | 0.155[h] | 0.89[h] | 2.55[h] | 12.5[h] | 210.6[h] |
| | 2012–2013 | 0.0072 | 0.0046 | 0.042 | 0.090 | 0.29 | 0.96 | 9.1 | 101.8 |
| | 2013-2014 | 0.0059 | 0.0050 | 0.025 | 0.103 | 0.28 | 0.45 | 6.8 | 102.3 |
| Annual baseflow[a b] Load | 2007–2008 | 0.0169 | 0.0043 | 0.045 | 0.471 | 2.19 | 1.25 | 4.7 | 12.6 |
| | 2008–2009 | 0.0044 | 0.0117 | 0.051 | 0.028 | na[d] | 5.36[e] | 16.1 | 18.9 |
| | 2009–2010 | 0.0049 | 0.0055[f] | 0.05 | 0.024 | 1.94 | 2.6 | 7.4 | 11.3 |
| | 2010–2011 | 0.003 | 0.002 | 0.017 | 0.01 | 0.931 | 0.8 | 8.8 | 5.7 |
| | 2011–2012 | 0.0040[h] | 0.0032[h] | 0.046[h] | 0.032[h] | 2.62[h] | 1.31[h] | 10.3[h] | 10.7[h] |
| | 2012–2013 | 0.0012 | 0.0012 | 0.014 | 0.012 | 1.08 | 0.38 | 4.4 | 11.0 |
| | 2013-2014 | 0.0014 | 0.0014 | 0.013 | 0.039 | 0.99 | 0.63 | 4.1 | 4.1 |
| Annual[a b] Load | 2007–2008 | 0.0489 | 0.0161 | 0.233 | 3.758 | 3.13 | 3.22 | 12.8 | 186.9 |
| | 2008–2009 | 0.0326[c] | 0.0347[c] | 0.165[c] | 0.349[c] | na[d] | 10.06[c e] | 36.15[c] | 267.3[c] |
| | 2009–2010 | 0.0157 | 0.0391[f] | 0.13 | 0.211 | 2.81[g] | 6.49 | 29.8 | 277.1 |
| | 2010–2011 | 0.0083 | 0.0067 | 0.0502 | 0.084 | 1.17 | 2.4 | 42.4 | 134 |
| | 2011–2012 | 0.0162[h] | 0.0107[h] | 0.118[h] | 0.187[h] | 3.51[h] | 3.86[h] | 22.8[h] | 221.3[h] |
| | 2012–2013 | 0.0085 | 0.0058 | 0.056 | 0.102 | 1.37 | 1.33 | 13.5 | 112.8 |
| | 2013-2014 | 0.0074 | 0.0063 | 0.038 | 0.142 | 1.27 | 1.07 | 10.8 | 106.5 |
| Station 005 | | | | | | | | | |
| Annual stormflow[a b] Load | 2007–2008 | 0.0145 | 0.0063 | 0.04 | 0.163 | 0.3 | 0.83 | 3.6 | 175.1 |
| | 2008–2009 | 0.0261[c] | 0.0368[c] | 0.140[c] | 0.320[c] | na[d] | 8.41[c e] | 30.8[c] | 613.7[c] |
| | 2009–2010 | 0.0339 | 0.0977[f] | 0.161 | 0.613 | 1.98[g] | 9.63 | 61.4 | 984.3 |
| | 2010–2011 | 0.0318 | 0.0244 | 0.114 | 0.53 | 1.03 | 3.97 | 41.9 | 1,458 |
| | 2011–2012 | 0.0163 | 0.0103 | 0.068 | 0.202 | 0.57 | 3.18 | 15.5 | 349.6 |
| | 2012–2013 | 0.0268 | 0.0097 | 0.126 | 0.341 | 1.48 | 3.26 | 37.2 | 419.5 |
| | 2013-2014 | 0.0183 | 0.0134 | 0.068 | 0.318 | 1.29 | 1.78 | 24.7 | 440.2 |
| Annual baseflow[a b] Load | 2007–2008 | 0.0047 | 0.0012 | 0.009 | 0.137 | 0.58 | 0.36 | 1.4 | 2.2 |
| | 2008–2009 | 0.0028 | 0.0108 | 0.032 | 0.019 | na[d] | 2.59[e] | 10.7 | 23.9 |
| | 2009–2010 | 0.0091 | 0.0063[f] | 0.077 | 0.064 | 2.48 | 3.55 | 8.5 | 11.9 |
| | 2010–2011 | 0.003 | 0.0019 | 0.013 | 0.015 | 1.988 | 0.84 | 24.4 | 18.6 |
| | 2011–2012 | 0.0025 | 0.0016 | 0.015 | 0.016 | 1.26 | 0.72 | 4.6 | 4.0 |
| | 2012–2013 | 0.0038 | 0.0031 | 0.024 | 0.069 | 2.47 | 0.96 | 8.6 | 9.5 |
| | 2013-2014 | 0.0070 | 0.0062 | 0.055 | 0.103 | 4.72 | 3.33 | 21.9 | 15.9 |

| TABLE F4, CONTINUED<br>COMPARISON OF LOADS (LBS/ACRE) PER MONITORING YEAR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Year | Cu | Pb | Zn | TP | $NO_3\backslash NO_2$ | TKN | $BOD_5$ | TSS |
| Station 005 | | | | | | | | | |
| Annual[a b] Load | 2007–2008 | 0.0192 | 0.0076 | 0.048 | 0.3 | 0.87 | 1.2 | 4.9 | 177.3 |
| | 2008–2009 | 0.0289[c] | 0.0475[c] | 0.172[c] | 0.340[c] | na[d] | 11.00[c e] | 41.53[c] | 637.6[c] |
| | 2009–2010 | 0.043 | 0.104[f] | 0.238 | 0.676 | 4.46[g] | 13.18 | 69.9 | 996.3 |
| | 2010–2011 | 0.0348 | 0.0263 | 0.127 | 0.55 | 3.01 | 4.82 | 66.27 | 1,476 |
| | 2011–2012 | 0.0188 | 0.0119 | 0.083 | 0.219 | 1.83 | 3.90 | 20.1 | 353.6 |
| | 2012–2013 | 0.0306 | 0.0128 | 0.150 | 0.410 | 3.95 | 4.22 | 45.9 | 429.0 |
| | 2013-2014 | 0.0253 | 0.0196 | 0.123 | 0.421 | 6.01 | 5.12 | 46.6 | 456.1 |

*Notes:*

[a] *Loadings were calculated from estimated stream levels for certain periods throughout the year. See Section 3.1.6 for details.*

[b] *While the seasonal median EMC is usually calculated for three stormflow events and one quarterly baseflow event, there are occasions that differ. See Section 3.1.6 for more details.*

[c] *Value is a combination of 2007–2008 and 2008–2009 values. See the 2008–2009 annual report (Tetra Tech 2010).*

[d] *Measured values are not presented because of high proportion of NDs and QC issues noted in Section 3.4 of the 2008–2009 annual report (Tetra Tech 2010).*

[e] *TKN concentrations were unexpectedly high and cannot be explained without additional investigation. See the 2008–2009 annual report (Tetra Tech 2010).*

[f] *High number of NDs because the RDL was above historic concentrations. See the 2011–2012 annual report (Tetra Tech 2012).*

[g] *NDs because of analytical interferences. See the 2011–2012 annual report (Tetra Tech 2012).*

[h] *Does not include loads from 06/20/12–09/20/12 because beaver dams were present. See the 2011–2012 annual report (Tetra Tech 2012).*

*BIOLOGICAL MONITORING*

Biological and physical habitat assessments were performed to determine the physical habitat score and Benthic Index of Biological Integrity (B-IBI) in the spring of 2007. In 2008, additional biological monitoring was conducted at 06-006C and at a new station, 06-008B. Both stations were evaluated again in subsequent years (2009 to 2014). The methodology followed the *Biological Monitoring and Assessment Program Plan* (PGDER, 2000). Sampling for benthic macroinvertebrates and physical habitat occurs in the spring (late March or early April) of each year. The B-IBI scores for each of the assessment years are presented in Figure F2 with the physical scores presented in Figure F3.

Trends in the biological parameters were observed in the upstream site, station 06-008B, but not in the downstream site, station 06-006C. Station 06-008B shows increase in B-IBI score compared to previous years (no trend) and a decreasing trend in physical habitat score. The 2013 and 2014 decreased B-IBI score (after years of increases) suggest that continued monitoring is necessary to better understand the processes occurring in the watershed and to determine if this is a new trend or a single event. Although increased B-IBI scores typically indicate improved biological conditions, an alternative explanation is that nutrient enrichment, including phosphorous and nitrogen, is causing an increase in algae and fish populations without improvement in habitat quality.

**Station 06-006C**

Physical habitat quality has varied each year. The physical habitat for station 06-006C is rated as *Supporting* (score 139). All parameters but pool substrate characterization rated as *Sub-Optimal*. The pool substrate characterization scored as optimal. This is the highest score for this

station since sampling started in 2007. Sediment deposition, pool substrate, and bank stability (both banks) scored better than previous years contributing to the higher score for 2014.

Assessments for Station 06-006C showed no consistent trend in biological condition over the 8 year monitoring period. The 2014 B-IBI score resulted in a site condition rating of *Poor*. In 2009, biological condition was rated as *Fair*, only slightly higher than other years, which rated as *Poor*, but again, those are not statistically significant differences (within 90 percent CI), and no trends are apparent. Midges (Chironomidae) dominate the sample. No mayflies (Ephemeroptera) were collected in the 2014 sample.

**FIGURE F2**
**B-IBI SCORES FOR BEAR BRANCH BIOMONITORING LOCATIONS: (LEFT = 06-006C, RIGHT = 06-008B)**

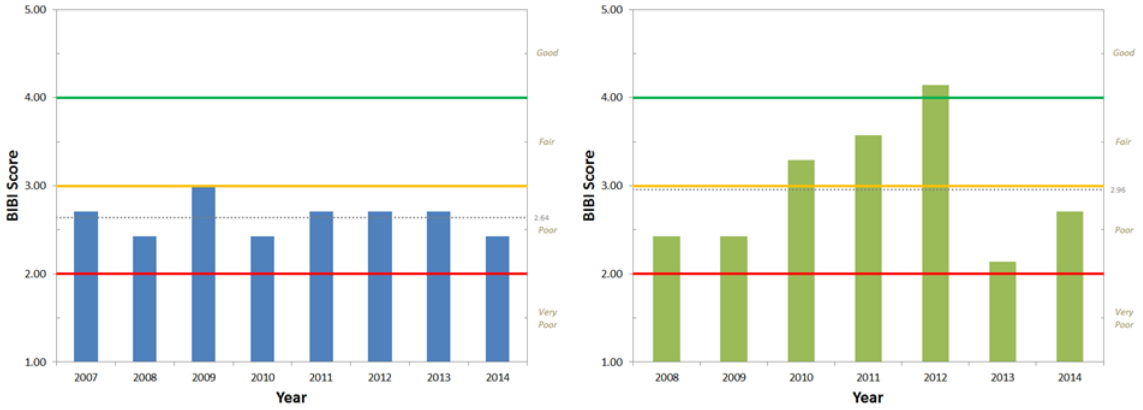
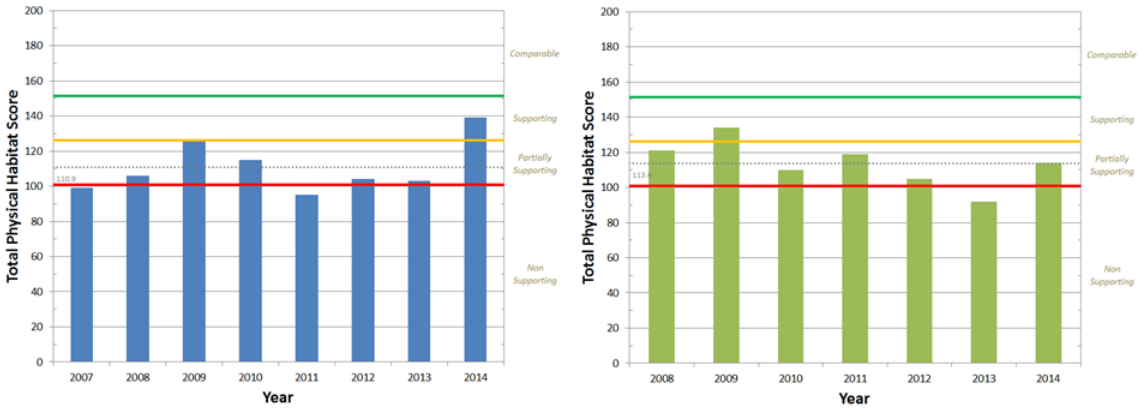



**FIGURE F3**
**TOTAL PHYSICAL HABITAT SCORES FOR BEAR BRANCH BIOMONITORING LOCATIONS: (LEFT = 06-006C, RIGHT = 06-008B)**




## Station 06-008B

The physical habitat rating for Station 06-008B is *Partially Supporting* with a total score of 114. The B-IBI score at this site results in an overall condition rating of *Poor*. The station is farther upstream than station 06-006C and has a more natural channel. Bank instability is the most prevalent problem at this station. The B-IBI score at this site increased each year from 2009 to 2012 before returning to previous levels in 2013 and 2014. Although some apparently significant differences exist in physical habitat quality from year to year, there is no consistent trend.

## 2. STORMWATER MANAGEMENT ASSESSMENT

### *BLACK BRANCH*

Prince George's County began monitoring the Black Branch watershed (BBW) and a small tributary of the BBW (Tributary 1) in 2001, using physical, hydrologic, and hydraulic methods to assess the effectiveness of LID technology on stream stability and meet the SWM assessment component of our NPDES MS4 Permit. The County discontinued the chemical monitoring program along Tributary 1 in March 2008. Biological monitoring, just below the confluence of Tributary 1 and Black Branch, was discontinued after 2007.

For this year's reporting, the MDE required County to submit data for January 1, 2014, through June 30, 2014, only. The monitoring at the Black Branch watershed (BBW) and a small tributary of the BBW (Tributary 1) are conducted between August and September each year. So we will incorporate the physical sampling of Black Branch in the next year's report.

# G. PROGRAM FUNDING

With enactment of State legislation in spring 1987, the Prince George's County SWM District (a special taxing district) was formed on July 1, 1987. The mission of the County's SWM Program is to minimize flooding, maintain water quality, and protect natural resources by controlling, regulating, and managing stormwater runoff associated with urban development and land use activities.

The services, responsibilities, and functions provided by Prince George's County's SWM Program include the following:

- Administering the County's SWM Ordinance, including reviewing and approving SWM concepts and design plans, studying floodplain limits, and granting waivers to the Ordinance.
- Performing detailed assessments of existing water quality with the assistance of private consultants.
- Securing grant funding to further the goals and objectives of our watershed restoration program.
- Preparing design plans and overseeing the construction of regional SWM facilities and water quality control projects.
- Performing water quality investigations in support of eliminating illegal connections to the County's storm drain system.
- Assisting our 22 Phase II municipalities with general Permit compliance.
- Performing floodplain studies and regulating the uses within the delineated floodplain areas.
- Preparing State-mandated monitoring reports on the County's SWM program activities.
- Inspecting construction of private SWM systems (primarily water quality basins and infiltration devices) outside of public rights-of-way.
- Periodically reinspecting private SWM systems outside of public rights-of-way.
- Enforcing applicable regulations for the maintenance of private SWM systems outside of public rights-of-way.
- Maintaining and operating publicly owned SWM systems and flood control facilities.

The operating budgets, including all maintenance activities, of the County's SWM program are summarized on DVD, Program Funding.